



THE ASSAM GAZETTE

অসাধাৰণ

EXTRAORDINARY

প্ৰাপ্ত কৰ্তৃত্ব দ্বাৰা প্ৰকাশিত

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No. 643 Dispur, Friday, 23rd September, 2022, 1st Asvina, 1944 (S. E.)

GOVERNMENT OF ASSAM

ORDERS BY THE GOVERNOR

DEPARTMENT OF HOUSING & URBAN AFFAIRS

NOTIFICATION

The 20th August, 2022

No.UDD(T)275/2022/6.- In exercise of the powers conferred by the Section 9 (nine) of the Assam Town & Country Planning Act, 1959 (Assam Act II of 1960) read with Sub-section I of Section 10 (Ten) of Assam Town & Country Planning Act (As amended), the Governor of Assam is pleased to published the following notice regarding the publication of Draft Master plan for Goreswar-2041.

Notice for the Publication of Draft Master Plan for Goreswar :

It is notified that the Draft Master plan for Goreswar prepared by the Directorate of Town & Country Planning, Government of Assam, Town & Country Planning Act, 1959 read with Sub-section I of Section 10(Ten) of Assam Town & Country Planning Act (As amended), for the area described in the schedule below is hereby published.

Any person or persons affected by the Draft Master plan may submit their objection or opinion in writing to the Assistant Director, Town & Country Planning, District Office-Baksa, within two months from the date of publication.

The Draft Master plan for Goreswar with all relevant papers and maps may be inspected free of Cost during office hours at the Office of the Director, Town & Country Planning, Government of Assam, Dispur, Guwahati-6, the Assistant Director, Town & Country Planning, District Office-Baksa, the Circle office, Goreswar Revenue Circle, Goreswar, Office of the Chairman, Goreswar Municipal Board, Goreswar. Copies of the Draft Master plan for Goreswar are available at the Office of the Assistant Director, Town & Country Planning, Baksa on payment.

SCHEDULE**1) Situation and Area**

District	:	Tamulpur (Formerly Baksa, till 2021)
Sub-Division	:	Goreswar
Area covered by Master Plan	:	61.64 Sq.kms
Goreswar Municipal Area	:	7.065 Sq.kms

2) Villages included in the Draft Master Plan for Goreswar

Sl.No.	Village	Mouza
1	Bhogpur	Betna
2	Betna	Betna
3	Barphukan Khat	Betna
4	Barphulchaki	Betna
5	Baghdoba	Kaurh Baha
6	Balahati	Pati Darang
7	Mukundapur	Betna
8	Kerpabhita	Betna
9	Nij Betna	Betna
10	Karipara	Betna
11	Fuhurabari	Betna
12	Ramcha	Betna
13	Saruphulchaki	Betna
14	Cheouni	Betna
15	Rangmahal	Betna
16	Dalongdia Gaon	Betna
17	Goreswar No. 1	Betna
18	Goreswar No.3	Betna
19	Goreswar No.4	Betna
20	Goreswar No.5	Betna
21	Silkijhar	Betna
22	Garogaon	Pati Darang
23	Lokra Barnagar	Pati Darang
24	Goreswar No.2	Betna

3) Description of Goreswar Master Plan Boundaries

East	:	Singimari, Rampur & Hajalpara
North	:	Ramsajar & Simila
West	:	Halonbari, Harijora & Bagirbari
South	:	Gorka & Pubpar Lokra

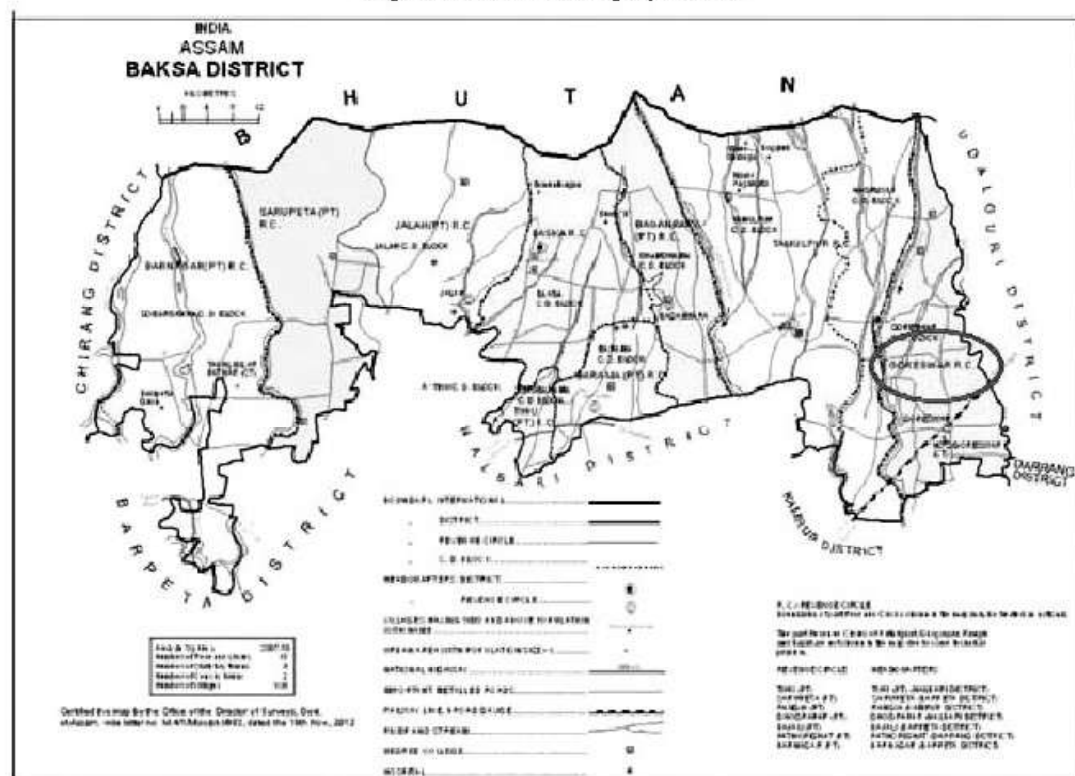
KAVITHA PADMANABHAN,
Commissioner & Secretary to the Govt. of Assam,
Department of Housing & Urban Affairs.

1. INTRODUCTION TO THE MASTER PLAN AREA

1.1 INTRODUCTION

Goreswar is a small town in the district of Tamulpur in the Bodoland Territorial Region of Assam. The district has been formed on 23 January 2022. Till then, the Goreswar Town was part of Baksa district. Baksa district itself was formed only in June 2004, carved out of the Bodo tribal majority villages from Baksa, Barpeta and Kamrup to form one of four Bodoland Territorial Autonomous District. The map of Baksa district is provided below from the Census of India 2011 with the location of Goreswar.

Figure 1: District Map of Baksa



Source: District Census Handbook, Baksa, 2011

1.2 REGIONAL RELEVANCE

Goreswar is located to the north of the Brahmaputra and is about 58 kms away from the city of Guwahati, after crossing the Saraighat Bridge. Baihata-Changsari town falls between Goreswar and Guwahati. Travelling ahead of Goreswar further towards north, one shall reach the Bhutan border and the popular picnic spots around Bogamati. Goreswar has a single-track railway station in the town, which falls under the Rangiya railway division of Northeast Frontier Railway Zone and this rail and road intersection has led to the growth of a small commercial town of Goreswar.

1.3 TOPOGRAPHY, CLIMATE AND SOIL

The town has almost plain topography, with a gentle slope from north to south. The northern border is shared with Bhutan and thus, the foothill regions form very picturesque areas of undulating topography.

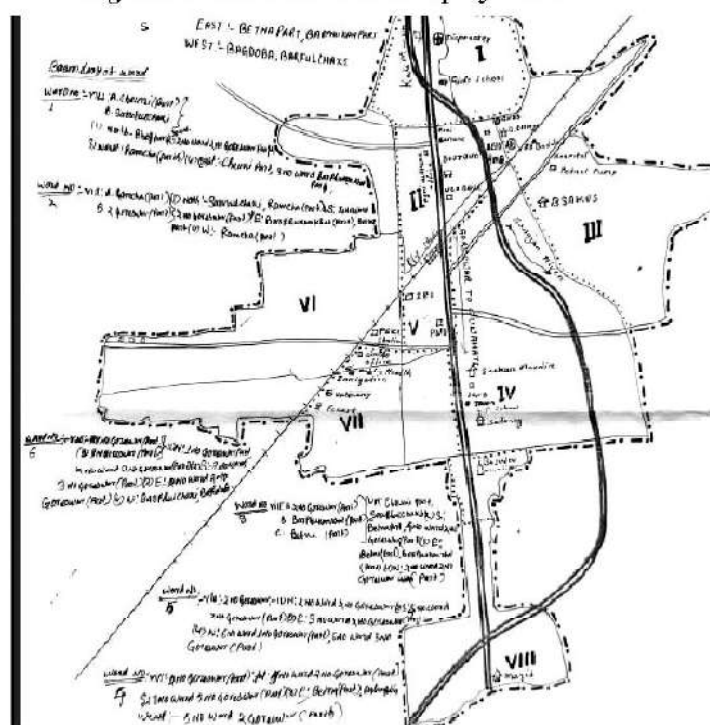
Like the rest of the State, Goreswar also enjoys sub-tropical humid climate, with a hot summer and moderate winter. January is the coldest month and May-August are the warmest months, with winter temperatures around 100 C and summer temperatures around 35°C. Monsoon rains are experienced from around June going up to September-October. Due to the outflow of water from the hills of Bhutan, the entire Baksa district experiences annual floods.

Being part of the Brahmaputra alluvial plain and sub-basin of Manas, the Baksa district is characterized by Older and Newer alluvium. Some of the plains are also formed out of denudation structural hills, with thick laterite soils. These soils support all kinds of crops.

1.4 URBAN CHARACTER OF GORESWAR TOWN AND ITS SURROUNDINGS

The town of Goreswar was declared in 2014, with 8 wards covering an area of about 7.065 sq.kms. From the data available at the Goreswar Municipal Board, Goreswar notified town covered a total population of 10,537 persons, with about 2687 households.

Figure 2: Goreswar Ward Map by GMB



Source: Goreswar Municipal Board

Thereafter in 2017, Goreswar increased its urban boundary to include 4 more wards, thereby taking the total wards to 12 and municipal area to 21.30 sq.kms. The ward-wise area distribution in Goreswar along with the revenue villages is given in table below.

Table 1 : Ward-wise area break-up in Goreswar Municipal Town

Wards	Area in Sq.kms	Revenue Villages (parts/whole) that form the wards
Ward 1	1.72	Cheouni, Saruphul saki
Ward 2	0.84	Ramcha, Goreswar No.2
Ward 3	0.87	Goreswar No.2, Barphukan khat, Betna
Ward 4	1.09	Goreswar No.2
Ward 5	0.44	Goreswar No.2
Ward 6	0.92	Goreswar No.1, Goreswar No.3
Ward 7	0.42	Goreswar No.3
Ward 8	0.74	Goreswar No.5
Ward 9	5.50	Dalong dia, Goreswar No.5
Ward 10	3.96	Goreswar No.1, Goreswar No.3
Ward 11	1.62	Goreswar No.1, Barphulsaki
Ward 12	3.19	Cheouni, Barphukan Khat
Total Goreswar Municipal Town		21.30 sq.kms

Source: Goreswar Municipal Board, 2022

However, the census details of the Goreswar municipal town are not available as a separate urban area from the 2011 Census which is the basis for the analysis of the Master Plan report. Instead, in the 2011 Census for the first time Goreswar No.2 revenue village area was recognized as a Census Town.

The Goreswar Master Plan area covers 24 revenue villages (*see table 2 below*) of which Goreswar No.2 alone is a Census town, recognized in the Census exercise of 2011. Studying the characteristics of Goreswar No.2 Census Town as urban in comparison with the rural characteristics of the remaining revenue villages included in the Goreswar Master Plan shall provide some idea of the current urban characteristics of Goreswar Municipal town of Baksa.

1.5 PROPOSED GORESWAR MASTER PLAN AREA

The Goreswar town as notified is acting as the commercial and transport hub for a large rural hinterland of Baksa district. To ensure that the infrastructure and service delivery provisions are likewise met up for the urbanising population, the master plan is proposed for an area covering an area of 61.85 sq.kms.

Table 2: List of revenue villages that form the Master Plan Area of Goreswar

Sl. No.	Name of Revenue Villages/Municipal Area	Area in Sq.kms	Sl. No.	Name of Revenue Villages/Municipal Area	Area in Sq.kms
1	Mukundapur	2.02	13	Barphukan Khat	1.21
2	Kerpabhita	1.64	14	Goreswar No. 1	2.09
3	Nij Betna	3.52	15	Goreswar No.3	3.36
4	Bhogpur	2.43	16	Barphulchaki	2.28
5	Karipara	1.8	17	Goreswar No.4	0.74
6	Fuhurabari	1.9	18	Goreswar No.5	2.71

7	Ramcha	3.38	19	Silkijhar	6.02
8	Saruphulchala	1.36	20	Baghdoba	3.4
9	Cheouni	2.3	21	Balahati	6.13
10	Rangmahal	2.58	22	Garogaon	2.61
11	Dalongdia	0.98	23	Lokra Barnagar	2.64
12	Betna	2.46	24	Goreswar No.2	2.29
Total Master Plan Area				61.64 Sq. km	

1.6 MASTER PLAN : DEFINITION & FORMULATION

Most of the urban settlements, especially smaller urban settlements, are characterized by haphazard and unplanned growth, non-conforming land uses, mushrooming unauthorized colonies, and land conversion from agriculture to urban resulting in environmental degradation and poor quality of life.

Master Plan/Development Plan is the major tool for urban land management, providing detailed land-use allocation for the sustainable development of city/town. Most master/development plans are made for 20-25 year periods, in phases of five years for periodic review and revision. A master plan is prepared either for improvement of an old city or for a new town to be developed on a virgin soil.

The purpose of the master plan is to set down as clearly and practically as possible the best and most appropriate future development of the town. For physical planning to be successful, it must develop a consensus on sound principles while balancing the visionary with the realistic. Formulation of master plans start with base map preparation, existing land use surveys and collection of socio-economic data necessary for reviewing the existing situation and proposing the future land use plan. With the advances in remote sensing and geographic information system, the plan making process can be expedited with integration of both spatial and attribute data, which enables detailed assessment of spatial growth of towns/cities, land use status, physical infrastructure facilities, etc. in anticipation of the projected population growth.

1.7 NEED OF THE MASTER PLAN

A master plan is a blueprint for the future. It will help the society-

- To control the development of various industries in a systematic way.
- To define public, semiprivate, and private spaces and public amenities
- To discourage the growth of town in an unplanned and unscientific way.
- To give a perspective picture of a fully developed town.
- To limit to a certain extent the unprecedented flow of rural population to the urban area.
- To offset the evils which have come up due to over-crowding of population such as acute shortage of houses, traffic congestion, inadequate open spaces and insufficiency in public amenities; etc.

1.8 PROJECT OBJECTIVE & ITS VISION

The broad objective of this project is to prepare a Master Plan Report for Goreswar Town. Report is the final output of the research.

Vision being a cherished dream, to achieve this vision it is necessary to break it into a number of goals and subsequently to objectives.

- Identifying existing gaps in physical and social infrastructure & to bridge those gaps
- By proper policy planning and strict adherence of the land use zoning and building byelaws.
- By submerging the planning with combining funds from the state as well as the centrally sponsored schemes
- Ensuring systematic, balanced & integrated development.

1.9 SCOPE OF WORK

- To identify the gaps/ incongruities between the actual land use and existing Master Plan proposals.
- To assess current situations, prospects, priorities and proposals for development.
- To identify the systematic and methodological deficiencies in implementation and preparation of Master Plan.

2. PROFILE OF THE MASTER PLAN AREA

2.1 URBAN CHARACTER OF GORESWAR TOWN

Goreswar developed as a commercial town around the road and railway intersection, and is the only notified municipality in entire district since 2004. Goreswar has a few established government offices, and district level institutions. However, the areas around Goreswar are largely rural in character, although the increase in population indicates that it is becoming imperative to provide basic urban services and infrastructure to sustain the health and development of the population.

As mentioned in the earlier chapter, studying Goreswar No.2 Census Town shall provide some idea of the current urban characteristics of Goreswar Municipal town of Baksa for which data will be available only with the release of District Census Handbook from the Census 2021 Census. For the purpose of understanding the Goreswar town and its characteristics for the current exercise, the Goreswar No.2 Census Town information from Census 2011 is analysed.

2.2 URBAN POPULATION AND HOUSEHOLDS

Goreswar Master Plan Area has a population of 39,324 persons with 7,888 house-holds. Of this, Goreswar Census Town claims 5,631 persons and 1,177 households. The remaining 23 revenue villages comprise of the remaining 6,711 households and 33,693 persons.

Table 3 : Population and Households in Goreswar Master Plan area

Area	Households	Population
Goreswar No.2 (CT)	1,177	5,631
Revenue Villages in the GMP area	6,711	33,693
Total Master Plan (GMP) Area	7,888	39,324

Source : District Census Handbook, Baksa, 2011

A study of the ward-wise break-up of the population provided by the Goreswar Municipal Board shows that population is almost evenly spread out across the various wards. Ward 9 which has the highest population of 2,247 persons also covers the maximum area of 5.50 sq.kms. The original 8 wards (Ward 1 to Ward 8) have a combined population of 10,537, while the newly added 4 wards (9, 10, 11 and 12) have added an additional 7,926 persons to the Goreswar municipal town.

Table 4 : Ward-wise population break-up, Census 2011

Ward	Population	Area in Sq.km
Ward 1	1409	1.72
Ward 2	1202	0.84
Ward 3	1439	0.87
Ward 4	1532	1.09
Ward 5	1635	0.44
Ward 6	1244	0.92
Ward 7	1088	0.42
Ward 8	988	0.74
Ward 9	2247	5.50

Ward 10	1992	3.96
Ward 11	1822	1.62
Ward 12	1865	3.19
Total	18,463	21.30

Source : District Census Handbook, Baksa, 2011

2.3 SEX-RATIO

The sex-ratio in Goreswar master plan area is 984 women per 1000 men. The gender-wise population break up reveals that the Goreswar Census town has a comparatively lower sex-ratio of 952 women in comparison to 989 women per 1000 men in the other revenue villages in the Goreswar master plan area. This can be attributed to the fact that the more urbanized areas have higher single male working migrants, who do not bring along their families thus bringing down the balance of the sex-ratio.

Table 5 : Area-wise Sex Ratio in Goreswar Master Plan Area, 2011

Area	Male	Female	Sex-ratio
Goreswar No.2 Census Town	2884	2747	952
Revenue Villages in the GMP area	16934	16759	989
Goreswar Master Plan (GMP) Area	16504	15940	984

Source : District Census Handbook, Baksa, Census 2011

2.4 POPULATION DENSITY

The population density of Baksa district is only 387 persons/sq.km. This reveals the intrinsic rural character of the district. However, it is found that the urban population density in Goreswar No.2 is very high at 2459 persons/sq.km., which is much higher than the population density of the other revenue villages in the Goreswar Master Plan (GMP) Area. The table below shows the population density in the various revenue villages in Baksa Master Plan Area. The Census of India uses population density of 400 persons/sq.km as one of the criterion for recognising a settlement as urban. In 21 out of the 24 revenue villages in the GMP area, the population density is more than 400 persons per sq.km. The highest densities of 1212 persons/sq.km and 2459 persons/sq.km are found in Bhogpur and Goreswar No.2 CT respectively.

Table 6 : Census Town /Revenue Village-wise Population Density, 2011

Revenue Village/Census Town	Population	Area (in sq.km)	Population Density
Goreswar No.2 Census Town	5631	2.29	2459
Mukundapur	1345	2.02	666
Kerpabhita	820	1.64	500
Nij Betna	1128	3.52	320
Bhogpur	2946	2.43	1212
Karipara	876	1.8	487
Fuhurabari	419	1.9	221
Ramcha	1480	3.38	438
Saruphulchala	1241	1.36	913
Cheouni	1336	2.3	581

Rangmahal	1091	2.58	423
Dalongdia	843	0.98	860
Betna	1765	2.46	717
Barphukan Khat	864	1.21	714
Goreswar No. 1	865	2.09	414
Goreswar No.3	2000	3.36	595
Barphulchaki	1092	2.28	479
Goreswar No.4	493	0.74	666
Goreswar No.5	1643	2.71	606
Silkijhar	4338	6.02	721
Baghdoba	1268	3.4	373
Balahati	2885	6.13	471
Garogaon	1608	2.61	616
Lokra Barnagar	1347	2.64	510

Source : District Census Handbook Baksa, Census 2011

2.5 LITERACY AND SCHEDULED CASTE/SCHEDULED TRIBE POPULATION

In literacy rate, the Goreswar Master Plan area reports a total literacy rate of 70 per cent. Goreswar No.2 Census Town has a better performance with 78 per cent literacy overall and 83 per cent male and 72 per cent female literacy. However, the remaining revenue villages in the GMP have a lower overall literacy rate of 69 per cent only, with 75 per cent male and 63 per cent female literacy. Actually, the overall Baksa district also has low literacy rate as seen in the table below, which maybe attributes to the lack of development of social infrastructure in the autonomous council areas for the longest time.

Table 7 : Literacy rate in the Goreswar Master Plan Area, 2011

Census Town/Revenue Villages/District	Total Literacy Rate	Male Literacy	Female Literacy
Baksa District	69%	77%	61.27%
Goreswar No.2 Census Town	78%	83%	72%
Revenue Villages in the GMP	69%	75%	63%
Goreswar Master Plan (GMP) Area	70%	76%	64%

Source: District Census Handbook Baksa, Census 2011

In terms of Schedule Caste and Schedule Tribe population to total population, the trend in Assam is to have higher Schedule Tribe population, due to presence of larger number of both hill and plains tribe communities in the state. This trend of higher ST population is seen in Baksa district demography as well. Within the overall GMP area, there are 41.1 per cent ST persons, while only 12 per cent SC. Goreswar No.2 Census town area similarly has lower SC population at 9.1 per cent, and higher ST population at 19.4 per cent. In 9 of the revenue villages comprising the GMP area, almost 99 per cent of the population is ST. The entire district of Baksa is mainly inhabited by Bodo-Kachari tribes.

Table 8 : Share of SC/ST population to total population, Goreswar Master Plan Area 2011

Revenue Villages/Census Town	Tot Pop	SC pop	%	ST pop	%
Goreswar No.2 CT	5631	513	9.1%	1095	19.4%

Mukundapur	1345	1	0.1%	570	42.4%
Kerpabhita	820	38	4.6%	106	12.9%
Nij Betna	1128	0	0.0%	1120	99.3%
Bhogpur	2946	0	0.0%	325	11.0%
Karipara	876	0	0.0%	220	25.1%
Fuhurabari	419	0	0.0%	197	47.0%
Ramcha	1480	0	0.0%	1417	95.7%
Saruphulchala	1241	165	13.3%	730	58.8%
Cheouni	1336	17	1.3%	237	17.7%
Rangmahal	1091	0	0.0%	658	60.3%
Dalongdia	843	28	3.3%	788	93.5%
Betna	1765	321	18.2%	1040	58.9%
Barphukan Khat	864	0	0.0%	335	38.8%
Goreswar No. 1	865	92	10.6%	530	61.3%
Goreswar No.3	2000	723	36.2%	559	28.0%
Barphulchaki	1092	0	0.0%	942	86.3%
Goreswar No.4	493	110	22.3%	134	27.2%
Goreswar No.5	1643	511	31.1%	293	17.8%
Silkijhar	4338	945	21.8%	650	15.0%
Baghdoba	1268	0	0.0%	1248	98.4%
Balahati	2885	964	33.4%	1881	65.2%
Garogaon	1608	3	0.2%	523	32.5%
Lokra Barnagar	1347	269	20.0%	551	40.9%
TOTAL	39324	4700	12.0 %	16149	41.1 %

Source: District Census Handbook Baksa, 2011

2.6 POPULATION PROJECTION

Population is the most important factor which is directly related to the various needs of the area. The prime objective of any Master Plan is to assess the present situation and project the future population for plan period, and accordingly calculate the requirements of both physical and social infrastructure in order to cater to the needs of such population. Therefore, population projection is the basic requirement for the projection of other needs of the area. From all these projections the developmental plan of an area should be prepared which can fulfill the different needs of the people living therein.

However, Baksa is primarily a rural district. Goreswar was notified as an urban municipality only in 2014, which deprived it of study under the Census of 2011. While Goreswar No.2 was recognized as a Census town only in 2011, which means that it does not have any urban population details in the Census of 2001. Details on the Goreswar town will be available only in the Census of 2021 which will be made available in the next couple of years. Till then, population projection for Goreswar cannot be calculated.

3. ECONOMIC BASE AND EMPLOYMENT

3.1 ECONOMIC SCENARIO OF GORESWAR

Baksa is largely an agricultural district, with presence of few cottage industries based on food products and handloom. Goreswar falls in the alluvial plain of the sub-basin of river Manas. The GMP is drained by a small stream called the Sanajan river, a small tributary of the larger Puthimari River, which is a tributary of the River Brahmaputra. Goreswar Master Plan Area (GMP) has been historically characterized by primary activities, mainly agriculture and fishing.

Table 9 : Sector-wise economic activities in Goreswar as per Census 2011

Sectors	Economic Activities as per Census definitions	Economic activities found in Goreswar
Primary	Agriculture, horticulture & forestry, Sericulture & fishing, mining and quarrying, animal husbandry and dairy	Paddy, vegetables, tea leaves, wheat, mustard, bamboo
Secondary	Manufacturing, construction, household industries	Handloom textiles and wood, cane and bamboo furniture
Tertiary	Trade, tourism, hotel & restaurants, transport, storage & communication, banking, public administration and informal sector	Not significant

Source : District Census Handbook Baksa, 2011

The old alluvial soil, rainfall conditions and terrain support the growth of tea, rice, mustard, other vegetables and bamboo. Other notable products from Goreswar are muga/edi textiles, rice products as well as mustard oil.

3.2 WORK-FORCE PARTICIPATION

The Goreswar master plan area comprises a work-force participation rate (WFPR) of 37.63 per cent, indicating that there is a large dependent as well as unemployed population. The Goreswar No.2 Census town shows a slightly higher work participation rate of 39.62 per cent, with male WFPR of 58.25 per cent and 20.06 per cent female WFPR. The female WFPR is very poor with just over 19 per cent in the overall GMP area. This indicates that women do not have adequate opportunities for economic engagements and are constrained to work within their homes or work without formal means of income.

Table 10 : Work Participation Rate, 2011 (in %)

Census Town/Revenue Villages/GMP	Total Workers	%	Male workers	%	Female Workers	%
Goreswar No.2 Census Town	2231	39.62%	1680	58.25%	551	20.06%
Revenue Villages in the GMP	12565	37.29%	9256	54.66%	3309	19.74%
Goreswar Master Plan (GMP) Area	14796	37.63%	10936	55.18%	3860	19.79%

Source : Calculated from Census 2011 data

Comparing the WFPR of Goreswar Master Plan Area to that of the overall state and district of Baksa, it is found that GMP fares poorer than both Assam and Baksa figures. Baksa is therefore one of the poorer districts of Assam, with large scale unemployment. However, like in

other towns of Assam, a study over different census periods may reveal a better participation rate, as more investments are being made in the state leading to the opening up of the economy.

Table 11 : Comparison of share of working population to total population at State-District level, Census 2011

State/District/Master Plan Area	2011
Assam state	38%
Baksa district	42.81%
Goreswar Master Plan Area	37.63%

Source : District Census Handbook, Baksa, Census 2011

3.3 TYPES OF WORKERS

As per the Census of India, the population can be divided into main workers, marginal workers and non-workers. They can be defined as:

- Main Worker:** One who has worked in any economically productive work for at least 183 days/6 months in a year.
- Marginal Worker:** One who has engaged in economically productive work for less than 183 days/6 months in a year.
- The ones who have not participated in any economically productive activity constitutes the 'Non-Workers'.

Table 12 finds that within the Goreswar master plan area, 73 per cent of the total workers are main worker and 27 per cent are marginal workers. Within the Goreswar census town, the figure is lower at 68 per cent. The remaining 32 per cent of the working population comprise of the marginal working population. In comparison, in the remaining revenue villages of the GMP area only 74 per cent working population are main workers. The 26 per cent marginal workers indicate towards higher number of people being engaged in agricultural activities for less than 6 months of the year, and remaining unemployed for the rest of the year. Throughout the GMP, 62 per cent of the total population remains unemployed.

Table 12 : Share of Main & Marginal Workers and Non-workers of Goreswar Master Plan Area, 2011

Census Town/Revenue Villages/GMP	Main Workers	Marginal Workers	Non-workers
	As % of total workers		As % of total population
Goreswar No.2 Census Town	68%	32%	60%
Revenue Villages in the GMP	74%	26%	63%
Goreswar Master Plan (GMP) Area	73%	27%	62%

Source : District Census Handbook of Baksa, Census 2011

The Census categorises workers into four main types. They are, -

- Cultivators:** person engaged in cultivation of own land or otherwise, for payment in money, kind or share.

b) **Agricultural labourers** : person engaged in the cultivation of another person's land as a sub-cultivator or labourer for wages. Such a person has no right of lease on the land or contract on land in which they work.

c) **Household industry worker** : Such a worker is engaged in an industry which is run by one or more members of a family within the home where they live in urban areas or within the village in rural areas.

d) **Other workers**: Workers who are not engaged in any of the above three kinds of work and includes government services, private job or other professionals, trade and commerce, etc. Plantation workers are included in this category as per Census.

Table 13 : Categories of Main workers in the Goreswar Master Plan area, 2011

Census Town/Revenue Villages/GMP	Main workers	Cultivators	Agricultural labourers	Household Industry workers	Others
Goreswar No.2 Census Town	1516	3.23%	3.56%	1.78%	91.42%
Revenue Villages in the GMP	9344	53.14%	12.17%	2.54%	32.16%
Goreswar Master Plan (GMP) Area	10860	46.17%	10.97%	2.43%	40.43%

Source : District Census Handbook, Baksa, Census 2011

From the table above it is evident that in the GMP area the majority of 'main' workers are engaged as 'cultivators', i.e., 46.17 per cent. However, this figure is the result of a very high percentage of 'cultivators' from the revenue villages in the GMP area. However, looking only at the Goreswar Census town, it is evident that only 3.23 per cent of its workers are cultivators, while 91.42 per cent workers are in the 'other' category. Thus it is evident that majority of workers in the census town area were engaged in the Goreswar market as small business owners, as well as working in the few banks, government offices and educational institutions in the area. This characteristic is evident of the need for looking at Goreswar Master Plan area with a view to developing its services sector and support its development, as the area becomes more and more urbanized.

4. HOUSING AND SHELTER

4.1 HOUSING AND ITS RELEVANCE

The Census of India defines a house as a building or part of a building having separate main entrance from the road or common courtyard or staircase, etc. used or recognised as a separate unit. The United Nation's Universal Declaration of Human Rights, 1948, recognizes the need of housing along with food, clothing, medical care, etc., as a right to a standard living required for health and well-being of everyone. Provision of housing is a social right, and the Government of India has been involved in providing housing to both rural and urban poor.

The Pradhan Mantri Awas Yojna-Urban (PMAY-U), a flagship mission of the Government of India for providing pucca housing to low and middle income groups characterizes housing as providing,

- a) All-weather housing unit with water, kitchen, electricity and toilet,
- b) Women empowerment
- c) Better quality of life for urban poor
- d) Security of tenure
- e) Adequate physical and social infrastructure.

The Government of India considers houses constructed with permanent materials to be a complete house. Thus through its various programmes it has promoted the use of permanent materials like burnt bricks, concrete, stone slabs, etc., for the completion of walls, floors and roofs. However in Assam, the earthquake hazard has led to the evolution of the Assam-type house which uses non-permanent materials on the walls, GI sheets for roof and concrete or mud floors, which have withstood the onslaught of the heavy rains of Assam. Such houses are also easier to reconstruct if damaged during Assam's annual floods.

4.2 TYPES OF HOUSE STRUCTURE

The Census enumerates houses on their sub-classification of 5 categories: permanent, semi-permanent, serviceable, non-serviceable and unclassifiable. The Census definition of the structures are as follows, -

- a) **Permanent:** Houses with wall and roof made of permanent materials. Wall can be made of G.I., Stone packed with Mortar, Stone not packed with Mortar, Metal, Asbestos sheets, Burnt bricks, Stone or Concrete. Roof can be made of Hand-made tiles, Machine made tiles, Slate, G.I., Metal, Asbestos sheets, Brick, Stone or Concrete.
- b) **Semi-Permanent:** Either wall or roof is made of permanent material while the other is made of temporary material.
- c) **Temporary:** Houses with wall and roof made of temporary material. Wall can be made of Grass, Thatch, Bamboo etc., Plastic, Polythene, Mud, Unburnt brick or Wood. Roof can be made of Grass, Thatch, Bamboo, Wood, Mud, Plastic or Polythene.
 - Serviceable temporary: Wall is made of Mud, Un-burnt brick or Wood.
 - Non-serviceable: Wall is made of Grass, Thatch, Bamboo etc., Plastic or Polythene.
- d) **Unclassifiable:** Houses not classifiable under any of the above category.

In Goreswar, like the rest of Assam, there are 3 types of houses -

- a) **Kutch House (Temporary):** A house having mud floor, bamboo wall plastered with mud and thatch roof.
- b) **Assam Type (Semi pucca/Semi permanent):** A house having brick wall, cement concrete or mud flooring, CGI/AC sheet roofing. Assam type houses may have any one or more of the house component (wall, roof, floor) in non-permanent material and are thus considered semi-pucca units.
- c) **Pucca House or Permanent House:** A house having cement concrete flooring, brick wall and RCC slab roofing.

Table 14 : Housing condition in Goreswar Master Plan Area, 2011 (% of households)

Housing Condition		Goreswar No.2 Census Town	Revenue Villages in the GMP	Goreswar Master Plan (GMP) Area
Permanent		43.86%	10.46%	15.45%
Semi-Permanent		54.25%	73.58%	70.69%
Temporary	Serviceable	0.00%	0.00%	0.00%
	Non-Serviceable	1.70%	15.77%	13.67%
Unclassifiable		0.20%	0.18%	0.19%

Source: District Census Handbook, Census 2011

In the Goreswar Master Plan area, nearly 70.69 per cent of housing units are semi-permanent houses. This clearly indicates towards the existence of greater number of Assam-type house structures which are characterized by the use of partly kutch materials, like mud floor or walls. Remaining 15.45 per cent households have permanent houses. In the Goreswar No.2 Census Town, 43.86 per cent households have permanent units, while 54.25 per cent have semi-permanent units or Assam type houses. In the GMP area nearly 13.67 per cent of households have reported having non-serviceable temporary housing structures. In the Census town this figure is 1.70 per cent, while in the other revenue villages this category of dwelling unit is reported by 15.77 per cent households. Unserviceable temporary houses cannot provide healthy living environment to their inhabitants and are vulnerable to the vagaries of nature, especially floods and heavy rainfall. This is a matter of concern and requires intervention through housing programmes.

Table 15 : Housing Tenancy Typology in Goreswar Master Plan Area (% of HHs)

Tenancy Status	Goreswar No.2 Census Town	Revenue Villages in the GMP	Goreswar Master Plan (GMP) Area
Owned	77.12%	98.68%	95.46%

Rented	15.68%	0.84%	3.06%
Any others	7.19%	0.48%	1.48%

Source : District Census Handbook, Census of India 2011

Majority of housing units in the total Goreswar Master Plan area are self-owned. It is found that more than 95 per cent units are owned, against 3 per cent which are rented. The trend of renting is higher in the Goreswar No.2 Census town with 15.68 per cent units rented, against only 0.84 per cent in the remaining revenue villages of the GMP area. Rented accommodation is particularly noticeable here due to the presence of migrant workers and students from peripheral villages, as well as migrant families who move from rural to more urbanized areas looking for better opportunities. The presence of rental housing indicates towards rising urbanisation as people migrate in search of better housing, higher education and economic opportunities. Overall in the total planning area, 1.48 per cent people live in other type of housing which usually means that there is existence of hostels and guest-houses, some amount of employer housing or the practice of living in relatives' homes.

4.3 CONDITION OF DWELLING UNITS

Housing condition indicates the physical state of the house or dwelling unit. Census has classified dwelling units into good, livable, and dilapidated. They can be defined in the following manner-

- Those houses which do not require any repairs and are in good condition may be considered as 'Good'.
- Those houses which require minor repairs may be considered as 'Livable'.
- Those houses which are showing signs of decay or those breaking down and require major repairs or those houses decayed or ruined and are far from being in conditions that can be restored or repaired may be considered as 'Dilapidated'.

The percentage distribution of households based on different housing condition in Goreswar can be understood from the following table:

Table 16 : Structural condition of houses in Goreswar Master Plan Area, 2011(% of HHs)

Condition of Census houses as	Goreswar No.2 Census Town	Revenue Villages in the GMP	Goreswar Master Plan (GMP) Area
Good	46%	38%	39%
Livable	50%	54%	54%
Dilapidated	3%	7%	7%

Source : District Census Handbook, Census of India 2011

The table above reveals that 39 per cent households in Goreswar Master Plan Area live in 'good' houses, while another 54 per cent live in 'liveable' houses. Since livable houses means houses that require only minor repairs while good houses require no repairs, it indicates that

majority of the houses are structurally stable. In the total master plan area of Goreswar only 7 per cent houses are dilapidated. Such houses require intervention through the various housing supply schemes of the government which may be looked into through planning by the Goreswar Municipal Board and the various Panchayats, who are responsible for implementation of government funded schemes.

4.4 HOUSING CONSTRUCTION MATERIAL : ROOF, WALL AND FLOOR

The condition of housing can be analysed through the study of the materials used in the construction of the roof, floor and walls. These three components help in understanding the viability of the house as an all-weather house. This is especially important in the flood plains of Assam, where floods are an annual occurrence across various locations in the state.

Table 17 : Roofing Material of Goreswar Master Plan Area, 2011 (% of HHs)

Roof Material	Goreswar No.2 Census Town	Revenue Villages in the GMP	Goreswar Master Plan (GMP) Area
Grass/Thatch/Bamboo/ Wood/Mud etc.	1.30%	14.02%	12.12%
Plastic/ Polythene	0.70%	1.93%	1.75%
Handmade Tiles	0.30%	1.18%	1.05%
Machine made Tiles	0.10%	0.03%	0.04%
Burnt Brick	1.70%	0.07%	0.69%
Stone/ Slate	3.70%	0.16%	0.69%
G.I./Metal/Asbestos sheets	91.29%	82.38%	83.71%
Concrete	0.80%	0.19%	0.28%
Any other material	0.10%	0.04%	0.05%

Source : District Census Handbook, Census of India 2011

The housing census information in the table above reveals that across the Goreswar Master Plan area, more than 83 per cent houses use G.I., metal and asbestos sheets in the construction of their roofs. This makes it clear that majority homes in Goreswar Master plan area are Assam-type houses, which use metal sheets in construction to fend off heavy rainfall and decrease the load of the roof against earthquake impact. Another 12.12 per cent houses in the total area use degradable natural products like grass, thatch, bamboo, wood, mud, etc. These houses would require frequent maintenance and change in the roofing material to keep the houses safe from the heavy monsoon rains. This share is 1.3 per cent only in the Goreswar census town, while in the remaining revenue villages this figure is 14.04 per cent. The growing trend across the state is to construct completely concrete homes, with RCC roofs. However in Goreswar census town only 0.80 per cent of houses have concrete or RCC roofs, instead 3.70 per cent have slate/stone roof.

Table 18 : Wall Material used in the Goreswar Master Plan Area, 2011(% of HHs)

Wall Material	Goreswar No.2 Census Town	Revenue Villages in the GMP	Goreswar Master Plan (GMP) Area
Grass/ Thatch/ Bamboo etc.	52.10%	86.59%	81.44%
Plastic/ Polythene	1.10%	2.16%	2.00%
Mud/ Unburnt brick	1.20%	0.28%	0.42%
Wood	1.30%	0.21%	0.37%
Stone not packed with mortar	4.60%	0.22%	0.81%
Stone packed with mortar	5.80%	0.31%	1.13%
G.I./ Metal/ Asbestos sheets	0.50%	0.05%	0.12%
Burnt brick	25.00%	7.47%	10.08%
Concrete	8.30%	2.55%	3.41%
Any other material	0.10%	0.16%	0.15%

Source : District Census Handbook, Census of India 2011

Continuing the trend of Assam-type homes in Goreswar master plan area, it is seen that 81.44 per cent houses use biodegradable materials like bamboo, thatch, etc., to construct the walls. In the census town, this figure stands at 52.10 per cent houses, while in the revenue villages of the GMP, this figure stands at 86.59 per cent. Next wall material used in majority is burnt bricks in 25 per cent households in the census town, and 7.47 per cent households in the revenue villages. Concrete walls are used by 3.41 per cent households in the GMP area, while in the census town this share is 8.30 per cent, and in the revenue villages it is 2.55 per cent. It is evident that the data shows that the census town has been constructing their homes using more permanent material than the villages around.

Table 19 : Floor material used in Goreswar Master Plan Area, 2011 (% of HHs)

Floor Material	Goreswar No.2 Census Town	Revenue Villages in the GMP	Goreswar Master Plan (GMP) Area
Mud	57.50%	93.07%	87.76%
Wood/ Bamboo	0.50%	0.09%	0.15%

Burnt Brick	1.40%	0.31%	0.47%
Stone	0.70%	0.30%	0.36%
Cement	39.80%	6.17%	11.19%
Mosaic/ Floor tiles	0.10%	0.03%	0.04%
Any other material	0.00%	0.03%	0.02%

Source: District Census Handbook, Census of India 2011

The table above analyses the floor material used in the Goreswar Master Plan Area and it shows that 87.76 per cent households have reported using mud as the dominant material. This share in the census town alone is only 57.50 per cent, while in the remaining revenue villages the share is a high 93.07 per cent. Other significant material used for floor construction is cement, of which the share in census town area is 39.80 per cent, while in the rest of the GMP area is 6.17 per cent.

4.5 AVAILABILITY OF KITCHEN, TOILET, BATHROOM

A good quality housing unit must be served by a cooking space, a toilet and a bathing area separate from the living/sleeping area. This ensure healthy, smokeless and clean cooking environment, with dignified, private and safe living conditions.

4.5.1 Kitchen

The Census enumerates kitchens in the following manner, -

- a) Cooking inside the House: (i) Having a kitchen: In a separate room
(ii) Not having a kitchen as a separate space in the house
- b) Cooking outside the house: (i) Having a kitchen as a separate room outside the house
(ii) Not having a separate room, rather in an open space

Table 20 : Availability of household kitchen in Goreswar Master Plan Area (% of HHs)

Kitchen Facility	Goreswar No.2 Census Town	Revenue Villages in the GMP	Goreswar Master Plan (GMP) Area
Cooking inside the house	84.80%	88.71%	97.49%
Cooking outside the house	15.00%	11.14%	2.48%
No cooking	0.20%	0.15%	0.03%

Source : District Census Handbook, Census of India 2011

The table above depicts the availability of kitchen across households in the Goreswar Master Plan Area. Almost 97.49 per cent households in the Goreswar Master Plan Area have reported the availability of separate kitchen inside the house, while 2.48 per cent cook outside the house. In the census town, the share of kitchen inside the house is 84.88 per cent, while 15 per cent have reported cooking outside the house.

4.5.2 Availability of Toilet

Availability of proper latrine with piped sewer system or septic tank is a must for households to lead a dignified life. The lack of proper access to latrine leads to a plethora of problems. Open defecation and outdated latrines like Pit Latrine and Service Latrine creates an unhealthy environment by attracting flies and contaminating land and water sources. It is known to spread fatal vector-borne diseases especially among children. It also creates discomfort and raises security issues.

Table 21 : Availability of Toilet Facility in the Household, Goreswar Master Plan Area, 2011 (% of HHs)

Latrine Facility	Goreswar No.2 Census Town	Revenue Villages in the GMP	Goreswar Master Plan (GMP) Area
Number of households having latrine facility within the premises	87.52%	45.80%	17.59%
Number of households not having latrine facility within the premises	6.29%	27.10%	41.21%
Public Latrine	0.38%	1.37%	2.09%
Open defecation	5.82%	25.73%	39.11%

Source: District Census Handbook, Census of India 2011

The table depicts the percentage distribution of the availability of latrine facilities across households in Goreswar master plan area. The availability of toilet within the premises is reported by only 17.59 per cent households within the total master plan area. However, in Goreswar No.2 census town, 87.52 per cent have toilets within the house premise, while this figure in the remaining GMP area is 45.80 per cent houses. Overall, 41.21 per cent households in the GMP have toilets outside the house, the figure derived majorly from the revenue villages of GMP. However, the distressing practice of open defecation is reported by 39.11 per cent households in the total master plan area. Although in the census town the figure is 5.82 per cent, in the revenue villages of GMP more than 25 per cent households report defecating in the open.

Table 22 : Type of Latrines used in the Goreswar Master Plan Area, 2011(% of HHs)

Latrine Facility	Goreswar No.2 Census Town	Revenue Villages in the GMP	Goreswar Master Plan (GMP) Area
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Flush/pour flush latrine	Piped sewer system	23.37%	12.99%	15.13%
	Septic tank	36.12%	8.10%	13.89%
	Other system	14.58%	29.34%	26.29%
Pit latrine	With slab/ventilated improved pit	18.54%	23.78%	22.70%
	Without slab/open slab	7.18%	25.55%	21.75%
Night soil disposed into open drain		0.05%	0.11%	0.19%
Service latrine	Night soil removed by human	0.00%	0.00%	0.00%
	Night soil serviced by animal	0.11%	0.05%	0.06%

Source: District Census Handbook, Census of India 2011

An in-depth analysis of the available toilet facilities depicts that majority of the households use the flush/pour flush latrine in the GMP area. Nearly 55.31 per cent households (15.13+13.89+26.29) use versions of the flush/pour flush latrine, while the outdated Pit Latrine system is used by 44.45 per cent of household within the master plan boundary. Within the census town of Goreswar No.2, 74.06 per cent households use flush/pour flush latrines, while 44.45 per cent households use the pit latrines. The distressing practice of disposing the night soil into open drains and pits has been reported by less than 1 per cent households in the planning area, yet it is necessary to address this matter and take the number to zero.

Although the 2011 Census data provides a concerning scenario of sanitation in the Goreswar Master Plan area, the launch of Swachh Bharat Mission on 2nd October 2014 have addressed the problem somewhat. Individual Household Latrines (IHLs), as well as Community/Public toilets (CT/PT) have been constructed in the Goreswar Municipal Town. The scheme has provided toilets in 196 households, while also constructing 6 Community toilets in the municipal area. In fact, the Swachh Bharat Mission has with their efforts also declared Goreswar to be an Open Defecation Free city.

Other than the efforts under SBM, the municipality has also constructed community toilets on their own taking the total number of community toilets to 14.

Table 23 : Toilets under Goreswar Municipal Town

Toilet type	Units
Individual Household Latrines	196
Community/Public toilets	14

Source: Goreswar Municipal Board, 2022

4.5.3 Availability of Bathrooms

Table 24 : Availability of Household Bathrooms in Goreswar Master Plan Area, 2011(% of HHs)

Bathroom Facility		Goreswar No.2 Census Town	Revenue Villages in the GMP	Goreswar Master Plan (GMP) Area
Available	Separate Bathroom	59%	14%	21%
	Enclosure without roof	11%	9%	10%
No Bathroom		29%	76%	69%

Source : District Census Handbook, Census of India 2011

From the table above, it is clear that only 31 per cent (21+10) of the households under Goreswar Master Plan Area have access to bathrooms. For around 10 per cent households this means having an enclosure without roof for bathing. However, it is concerning that a total of 69 per cent households in the GMP area have no bathroom. Within the census town area, 59 per cent households have separate bathrooms, while 29 per cent do not have one. In the GMP area outside the census town, 76 per cent households do not have any bathroom at all. This is a major barrier in the way of living a dignified life, and reflects how the area is lagging behind in basis infrastructure. This matter must be addressed in planning the infrastructure of the town by the Goreswar Municipality.

4.6 ADEQUACY OF HOUSING FOR FAMILIES: CONGESTION ISSUES

Addressing the issue of congestion is very essential in understanding the adequacy of housing and estimating the shortage of housing in a planning area. It is desirable that a married couple should have one separate room to themselves and their small children.

The table below shows that most of the households (72.39%) in Goreswar Master Plan area have one married couple. However, the area to be addressed is for the households with more than one married couple, who shall require a separate house, either owned or rented if the current house they live in has one Bedroom-Hall-Kitchen set-up. Two married couples are usually seen in Indian households, when married son and parents live together. Yet there are 296 households in Goreswar Master Plan Area with more than two-married couple in the household.

Table 25: Percentage of Households with the number of Married Couples, Goreswar Master Plan Area, 2011

No. of Married Couples in a Household	Goreswar No.2 Census Town	Revenue Villages in the GMP	Goreswar Master Plan (GMP) Area	
			% of Households	No. of Households
None	16.10%	9.32%	10.33%	815

1	66.90%	73.36%	72.39%	5711
2	12.90%	13.64%	13.53%	1067
3	2.80%	2.97%	2.95%	232
4	1.00%	0.53%	0.60%	47
5+	0.30%	0.18%	0.20%	16

Source : District Census Handbook, Census of India 2011

Again the table below shows that most of the households in Goreswar Master Plan area have two (35% HHs) to three (25.3% HHs) rooms per household. However, the area to be addressed is for the households with one room or no exclusive rooms. In Goreswar Master Plan Area 33 households have no exclusive rooms in the house. Such households are mostly likely to look for alternate housing as the family grows.

Table 26 : Number of Rooms available in a House per Household, Goreswar Master Plan Area, 2011

No. of rooms	Goreswar No.2 Census Town	Revenue Villages in the GMP	Goreswar Master Plan (GMP) Area	
			% of HHs	No. of Households
No exclusive room	0.8%	1.0%	1.0%	33
One room	14.7%	18.4%	17.9%	553
Two rooms	34.0%	35.1%	35.0%	1916
Three rooms	26.6%	25.0%	25.3%	2037
Four rooms	12.9%	12.4%	12.5%	1204
Five rooms	6.1%	4.8%	5.0%	707
Six rooms and above	4.9%	3.2%	3.5%	633
Total	100.0 %	100.0 %	100.0 %	7082

Source : District Census Handbook, Census of India 2011

Here again the table below shows that in the Goreswar Master Plan Area, majority of households in Goreswar master plan area have more than 3 members in the households. There are 232 households which are single member households, meaning these are most likely migrant workers, who living alone within the Goreswar planning area for work or studies. The area to address maybe the 2460 households with more than 6-8 members up to 9 plus members, who would most likely have more than 2 married couples and shall be likely to look for alternate housing for the additional married couples in the family.

Table 27 : Number of family members per Household, Goreswar Master Plan Area, 2011(No. of HHs)

No. of family members	Goreswar No.2 Census Town	Revenue Villages in the GMP	Goreswar Master Plan (GMP) Area
1	111	122	232
2	210	325	535
3	427	781	1208
4	632	1317	1949
5	384	1016	1400
6-8	384	1076	1459
9+	111	188	298

Source : District Census Handbook, Census of India 2011

4.7 HOUSING SHORTAGE IN GORESWAR MASTER PLAN AREA**4.7.1 Household Size**

The number of family members per household divided by the total population gives the household size of the planning area. In the case of Goreswar, the average family size is 4.98 persons. The following table shows the number of person per household in Goreswar Master Plan area.

Table 28 : Household Size in Goreswar Master Plan Area, 2011

Year	Number of Households	Total Population (in numbers)	Number of Persons per Household
2011	7888	39324	4.98

Source: District Census Handbook, Census of India 2011

5. TRANSPORTATION

5.1 INTRODUCTION

Transportation facilitates commerce and communication. It provides access to places of employment, recreational centres and medical facilities. It is also the engine of economic growth. It is an integral component of supply chain management and therefore, a sound transportation infrastructure is crucial for maintaining price stability.

Road and Rail network plays a vital role in the urban planning, and traffic and transportation are considered as a function of land use planning. Transport network are considered as the lifeline of the city and if any bottleneck or obstruction arises, it will pose severe threat to the day-to-day life of the people. A good road and rail network is a symbol of sound development of a city. A bad transportation infrastructure on the other hand makes vehicles susceptible to wear and tear, increases fuel consumption of automobiles, and increases the likelihood of accidents.

The study of transportation helps in understanding the existing situation, potentials, weaknesses, etc. and consequently aids to draft out strategies and projects for future development.

5.2 ROAD NETWORKS OF GORESWAR

Goreswar is well connected by rail and road Network. Below Table shows the Road condition of the Town.

Table 29 : Status of roads in the Goreswar Municipality

Total length	Surfaced				Unsurfaced		
	Water bound macadam	Black top/Cement concrete	Paver Block Road	Total	Motorable	Non motorable	Total
2.68 kms	--	1.738 kms	0.942 kms	2.68 kms	--	--	--

Source: Goreswar Municipal Board, 2021

There is also one major railway Track crossing the middle of the Town

5.2.1 Traffic Volume at Major Locations :

Traffic volume surveys conducted along the major transport routes and at the major intersection. This was carried out in order to generate an idea about the traffic volume along the major routes and at the major intersections, the peak hour timing and the peak hour traffic and also the total day and the peak hour traffic composition.

Table 30 : Traffic Volume Survey 2022 (April), Goreswar Town, Morning (8 A.M to 12 Noon) - Incoming

Location	M-Cycle/Scooter	Car	Bicycle	E-Rickshaw	Rickshaw	Auto/Tempo	Mini-Bus/ Traveller/ Winger	Truck	Bus	Thela	Tractor	Mini-Truck, Ape, Pick-Up	Total
Goreswar-Rangia Road	411	32	252	25		28	15	3		20	1	12	799
Goreswar-Naokata Road	375	28	110	28		27	12	5	2	8		10	605
Goreswar-Khoirabari-Tangla Road	325	20	155	21		25	8	1		10	1	8	574
Goreswar-Baihata Road	282	37	98	22		25	10	3		10	2	11	500
Goreswar-Tamulpur Road	216	30	108	26		20	12	1		9	1	9	432
Goreswar-Andharighat Road	382	19	121	18		21	8			12	1	13	595
Total	1991	166	844	140		146	65	13	2	69	6	63	

Source: Survey Conducted By LSS, Guwahati

In the morning time, it has been observed that a highest no. of 799 vehicles entered Goreswar town from the Goreswar-Rangia Road, with total motor-cycles/scooters being the highest at 411. Also here, it has been observed that between 8 a.m. to 10 a.m, a lot of bicycles pass, mostly rode by students going to their respective education institutes.

Table 31 : Traffic Volume Survey 2022 (April), Goreswar Town, Morning (8 A.M to 12 Noon) - Outgoing

Location	M-Cycle/Scooter	Car	Bicycle	E-Rickshaw	Rickshaw	Auto/Tempo	Mini-Bus/ Traveller/ Winger	Truck	Bus	Thela	Tractor	Mini-Truck, Ape, Pick-Up	Total
Goreswar-Rangia Road	375	23	185	19		20	8	1		17	1	10	659

Goreswar-Naokata Road	280	21	98	23		32	7	3		10		9	483
Goreswar-Khoirabari-Tangla Road	255	13	128	30		23	5			5	1	4	464
Goreswar-Baihata Road	396	48	132	35		20	8	5	1	7	2	9	663
Goreswar-Tamulpur Road	468	54	188	34		18	6			7	2	7	784
Goreswar-Andharighat Road	320	13	105	22		25	5			10	1	8	509
Total	2094	172	836	163		138	39	9	1	56	7	47	

Source: Survey Conducted By LSS, Guwahati

During the morning hours, maximum vehicles amounting to 784 left Goreswar Town via. the Goreswar-Tamulpur Road.

Table 32 : Traffic Volume Survey 2022 (April), Goreswar Town, Afternoon (3 Noon to 6 P.M) - Incoming

Location	M-Cycle/Scooter	Car	Bicycle	E-Rickshaw	Rickshaw	Auto/Tempo	Mini-bus/ Traveller/ Winger	Truck	Bus	Thela	Tractor	Mini-Truck, Ape, Pick-Up	Total
Goreswar-Rangia Road	400	33	252	26		28	10	1		8	1	8	767
Goreswar-Naokata Road	355	31	125	25		22	8	2		5		7	580
Goreswar-Khoirabari-Tangla Road	201	15	120	20		4				4		7	371
Goreswar-Baihata Road	288	35	105	21		27	7	5	1	5	1	8	503
Goreswar-Tamulpur Road	405	48	172	26		15	3			8	2	5	684
Goreswar-Andharighat Road	265	14	110	26		18	4			6		7	450
Total	1914	176	884	144	0	114	32	8	1	36	4	42	

Source : Survey Conducted By LSS, Guwahati

In the afternoon, Goreswar-Rangia Road saw the highest incoming traffic to Goreswar town at 767.

Table 33 : Traffic Volume Survey 2022 (April), Goreswar Town, Afternoon (3 Noon to 6 P.M) - Outgoing

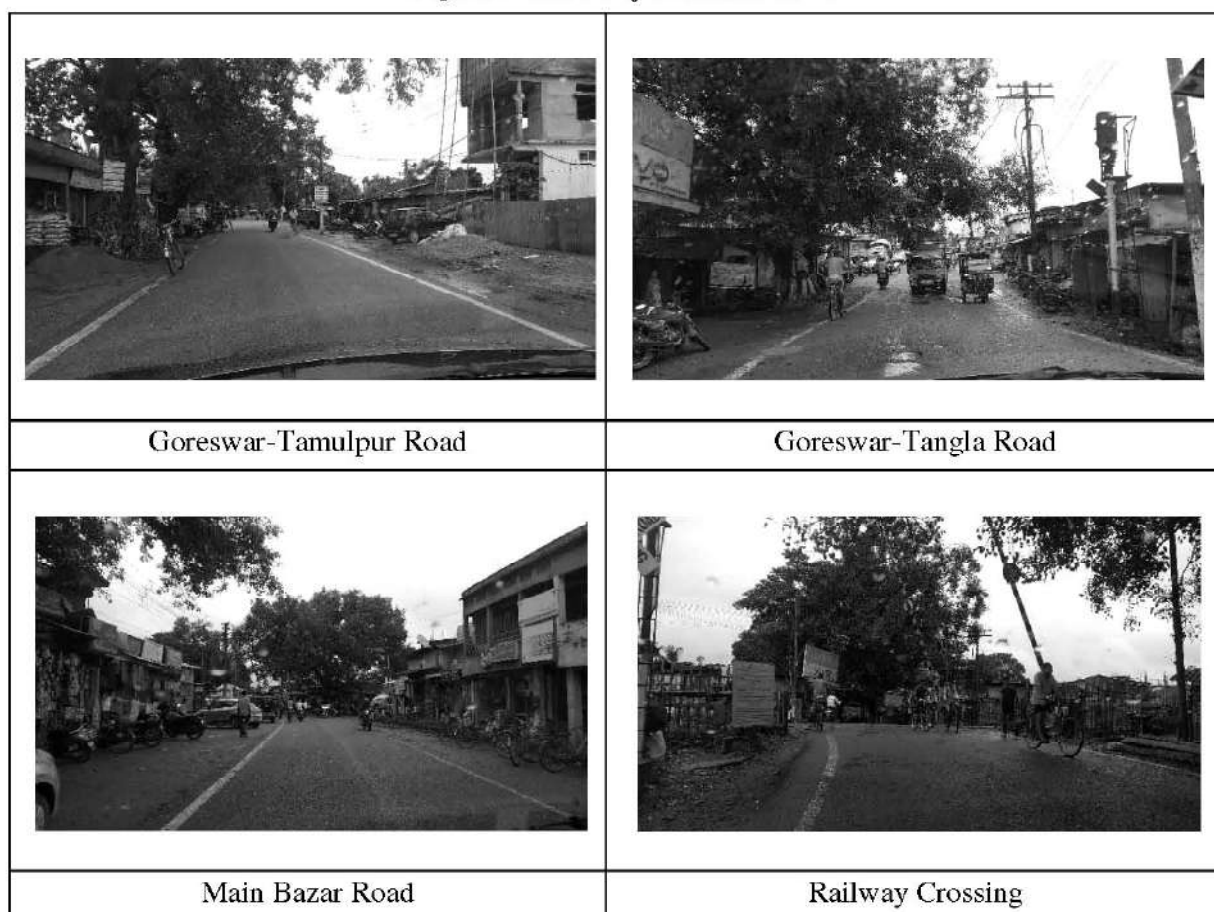
Location	M-Cycle/Scooter	Car	Bicycle	E-Rickshaw	Rickshaw	Auto/Tempo	Mini-Bus/ Traveller/ Winger	Truck	Bus	Thela	Tractor	Mini-Truck, Ape, Pick-Up	Total
Goreswar-Rangia Road	350	35	230	28		25	17	3		16	2	13	719
Goreswar-Naokata Road	285	42	145	35		37	11	2	1	7		12	577
Goreswar-Khoirabari-Tangla Road	338	22	165	28		25	7			7		11	603
Goreswar-Baihata Road	320	52	148	42		18	5	3		4	2	12	606
Goreswar-Tamulpur Road	365	35	98	23		22	8	1		7	1	5	565
Goreswar-Andharighat Road	475	21	145	28		20	7			12		12	720
Total	2133	207	931	184		147	55	9	1	53	5	65	

Source : Survey Conducted By LSS, Guwahati

In the afternoon, 720 vehicles left Goreswar town by the Goreswar-Andharighat Road. Motor-cycles/scooter is the dominant vehicle exiting the town in all the roads, the highest being 475 at Goreswar-Andharighat Road.

5.3 AREAS OF MAJOR CONGESTION

It has been observed from the traffic survey that areas of New Chowk, Goreswar Station Chowk, Goreswar College Chowk, face traffic congestion especially during peak hours. In New Chowk, it has been observed that frequent closure of the rail gate obstructs the flow of traffic and causes jams.

Figure 3: Photos of Goreswar Town

5.4 TRANSPORT INFRASTRUCTURE

Within the Goreswar town, there is no any bus stop. The buses plying on the main Road near the Bazar. They stop by the road side creating traffic bottlenecks during peak hours. Also, there is no any designated auto-stands in Goreswar Town. Since these bus-stands and auto-stands cater to a large segment of the population daily, a separate Bus-Stand/ Truck Terminus needed in that area and they should be equipped with standard waiting rooms, toilet facilities, and dustbins to make the environment around them accessible, comfortable and sanitary.

5.5 FREIGHT ZONES AND LOGISTICS

As Goreswar is favourably located in proximity to the state capital, a provision of efficient goods transportation facility is important to promote trade and commerce, and in turn economy of the town. Since the town has an agro based economy with horticulture produces, there is lot of goods movement between the towns and surrounding villages/region, which can also be anticipated in the future. To provide them a permanent and formal parking space, a Small Truck Terminal come Bus Stand has been proposed near the industrial zone.

The truck terminus will have major components like packaging, office complex, restaurant, accommodation, parking and other ancillary facilities. It has to be developed in phases to avoid the creation of surplus infrastructure. Truck Terminal will be designed for the idle parking of the trucks and carriers/containers.

5.5.1 *Movement of Goods Modes*

The movement of goods modes on the road network needs to be rationalized. Goods modes can be grouped into three types as under:

- **Small sized vehicles like pickups:**

Small size vehicles like 'Pick ups' perform an essential distribution function. In space occupancy and manoeuvrability, they are similar to cars. Their movement on all road sections, at all times of day may be permitted. As part of traffic management plans, separate parking areas for 'Pick ups' may be identified.

- **Medium sized vehicles like LCVs and**

Medium size vehicles like LCVs are important to move goods to and from industries, warehouses and other major activities. They affect overall level of service of traffic.

- **Large size vehicles like 2/3 Axle Trucks, Truck Trailer & MAVs**

Large sized goods vehicles consume high proportion of road capacity, impede traffic flows, causes accidents, adversely affect environment and consume large extent of land for parking. As these vehicles are bringing in/taking out traffic from/to other parts of the country, these vehicles need to be received at the urban periphery and facilitated in terms of planned terminals. Major truck terminals and/or idle parking are proposed.

5.6 FOOTPATHS AND BICYCLE TRACKS

As no standard footpaths and bicycle tracks are visible in the Town, people are often seen walking on the road causing the movement of the traffic to slow down. Also road-side encroachment by the informal Sector on the footpaths create obstruction in the way of facilitation of smooth movement of Traffic.

5.6.1 *Pedestrian Facilities*

Walking is a predominant mode of movement in the town. The transport system plan promotes and facilitates walking. The main strategies and measures proposed as part of the plan are as under:

- Provision of side-walks on primary arterials, sub-arterials and collectors on both sides of the road and on at least one side on local roads;
- Cross pedestrian facilities to be provided as per the warrants recommended by Indian Roads Congress;
- Side- walks on all the major roads;
- Improvement measures in terms of pedestrian controlled facilities at intersections, grade separators and widening of side- walks in the Central Area and along major corridors.

5.7 PARKING : ON-STREET AND OFF-STREET

There is no On-Street, Off-Street provision of parking in the Town. The Town has high inadequacy of organized parking space for the motorized vehicle. The cars are parked in the main road of the town creating congestion. The roads are already overburdened with traffic and encroachment.

5.7.1 *Parking Policy:*

Every vehicle trip ends in a demand for parking of the vehicle at its trip end. The parking of vehicles needs extensive and exclusive land area. Otherwise parking would spill over to other use areas like road carriageway and footpaths, open spaces. In turn they would affect safety and environmental quality.

The escalating demand and varied needs of parking in Goreswar can only be met and organized in the framework of a comprehensive Parking Policy. Parking policy needs to move from 'non-restrictive' to 'restrictive' policy. 'Restrictive' policy would range from banning of parking to restricted provision, regulation and pricing of parking spaces. However, the recommended parking policy for the town should have the following salient features as per the Urban National Transport Policy (NUTP)-2006:

- Preferential allocation of parking space(s) for public transport vehicles and non-motorized modes of transport;
- Levy of graded scale of parking fee representing truly the value of the land occupied;
- Development of efficient accessibility to parking lots;
- Encourage to go in for electronic metering for better realization of parking fee;
- Development of underground parking in green areas (considering the social acceptance of the people);
- Encouraging people to use public transport to reach city centre(s);
- Development of parking lots on PPP format for reducing burden on public funds

The Master Plan asserts that a comprehensive parking policy for the area shall be prepared separately taking into account all aspects including existing and potential parking demand, institutional measures and implementation mechanism.

5.8 STREET LIGHTING AND PROPOSED IMPROVEMENT PLAN

Adequate street lighting is crucial for the safety of motorists and pedestrians. The coverage of street lights is inadequate especially in the interior lanes. There is also a need for installments of new street lights in the newly notified wards. Another problem is the frequent power outages affecting the lighting. It is proposed that technologies like standalone solar LED street lighting be explored. Also, scientific planning should go into determining the installation of street lights as lighting requirements of different areas vary. It is proposed that Goreswar have an energy efficient street lighting, and continuity of street lighting for carriageway and pavements for safety purpose. The distance between poles should not be more than 30 meters.

5.9 SIGNAGE AVAILABILITY AND REQUIREMENTS

5.9.1 *Lane Markings and Signage*

Generally no Lane Markings and Signage has been observed throughout the Town. Traffic signals, signs and pavement markings are used for traffic control for that

- All on-street parking spaces need to be clearly defined by lane markings.
- Adequate and appropriate signage's to be installed at all places on the street network to identify 'parking' and 'no parking' areas.
- Off-street parking places to be clearly identified by signs and distinguishing marks.

6. INFRASTRUCTURE, PUBLIC UTILITIES & SERVICES

6.1 PHYSICAL INFRASTRUCTURE

To ensure that urbanization happens sustainably, a well-executed delivery of urban services is a must. A sound infrastructure of urban services is necessary for combating diseases and poverty and improving the quality of life. Accordingly, the urban service profile refers to the current state of infrastructure and utility systems in the city. It indicates the adequacy or inadequacy of infrastructure services in terms of coverage, quantity, and quality, and attempts to identify the factors responsible for inadequate development of infrastructure services. It measures the gap between demand and supply of different infrastructure services, and examines the factors that explain the gap.

6.2 WATER SUPPLY

Water supply source within the premises for cooking, cleaning and bathing is considered as the most essential need for healthy living. Providing treated water, available 24X7 all year round is a major function of municipalities. It is also a source of revenue for the local bodies. However, no notified town in Assam has complete coverage under water supply schemes. Unfortunately, the existing partial schemes that are present in the few towns are dysfunctional. Therefore, majority of the urban population has to be self-dependent for accessing water.

Table 34: Location of water source, Goreswar Master Plan Area, 2011(% of HHs)

Location of source	Goreswar Municipal Area	Master Plan Area (excluding MB area)	Total Master Plan Area
Within premises	95%	68%	72%
Near premises	3%	22%	19%
Away	2%	10%	9%

Source : District Census Handbook, Census of India 2011

Nearly 72 per cent households in the Goreswar master plan area have their water source within their premises. In the Goreswar No.2 census town 95 per cent households have water source within their premise, while in the revenue village sin the GMP 68 per cent have water source in their premises. Nearly 28 per cent have their wagger source outside their premise or away from it.

The following table gives the percentage distribution of the sources of drinking water in Goreswar as per the Census 2011:

Table 35 : Main Source of Drinking Water in Goreswar Master Plan area, 2011(No. of HHs)

Sources	Goreswar No.2 Census Town	Revenue Villages in the GMP	Goreswar Master Plan (GMP) Area
Tap-water from treated source	5.00%	0.90%	1.51%
Tap-water from un-treated source	0.30%	0.04%	0.08%
Covered well	0.40%	0.37%	0.37%
Un-covered well	0.20%	0.20%	0.20%
Hand-pump	93.11%	96.81%	96.26%
Tube-well/Bore-hole	0.30%	1.27%	1.13%
Spring	0.00%	0.00%	0.00%

River/Canal	0.00%	0.09%	0.07%
Tank/Pond/Lake	0.00%	0.07%	0.06%
Other Sources	0.70%	0.24%	0.31%

Source : District Census Handbook, Census of India 2011

In the Goreswar census town as well the revenue villages in the master plan area, there is no successful water supply project covering the entire population. Instead, the need for water is primarily met through private means. Majority of the households, i.e., 96.26 per cent households in the total master plan area source their water from hand-pumps. Within the Goreswar census town, 5 per cent households reported the use of tap-water from treated source.

6.3 ACCESS TO DRAINAGE

As per Goreswar Municipal Board, the municipal area has the following condition of drains,

Table 36: Drains in Goreswar municipal Area (in kms)

Drain-type	Total length	Pucca	Kutchha
Storm Water Drains	0	0	0
Drains	4.11	2.065	2.05

Source: Goreswar Municipal Board

As per Census 2011 data, 92.9 per cent households in the total Goreswar Master Plan area do not have any access to household level waste water drainage. Of the 2.1 per cent households having access to closed drains, 4.9 per cent are from Goreswar No.2 census town, while only 1.6 per cent households are from the revenue villages in the master plan area. Remaining 5 per cent households have access to kutchha unlined roadside drains carrying storm waste to nearby low lying areas. Largely due to insensitivity of the public, garbage is often thrown in these open drains, causing water logging problems during rainy days.

6.4 SOLID WASTE MANAGEMENT

Solid Waste Management refers to the practice of collecting, treating and disposing municipal wastes originating from materials which have lost its purpose and are of no value, in accordance with the principles of public health, engineering, economics, aesthetics, etc. The sources of municipal solid wastes are- (i) residential wastes (ii) commercial wastes (iii) wastes from rituals (iv) de-silting wastes and (v) treated bio-medical wastes. According to the Solid Waste Management Rules, 2016, all the urban local bodies are responsible for Solid Waste Management activities within their respective jurisdiction.

In Goreswar , the waste collection has been taken up under the Swacch Bharat Mission scheme. A local self-help group, Anjali is engaged in door-to-door collection of garbage from the entire town and transporting to the solid waste processing facility. The details of municipal waste collection in Goreswar Municipal Area are as follows, -

Table 37 : Solid Waste Management scenario in Goreswar Municipal Town, 2021

Total wards covered	8
Wards covered under door to door collection	6
Wards covered under Segregation of waste	2
Average waste generation	0.5 Tons per day (TPD)
Average waste processing	0.27 TPD

Source : Goreswar Municipal Board, 2021

Currently, the solid waste and other garbage are un-scientifically dumped and disposed at an open dumpsite of about 6020.116 sq.m near Ward 6 of the Goreswar town. The land belongs to the Goreswar Municipal Board and under the Swacch Bharat Mission- Urban, the dumping ground is being developed for segregation and processing the waste materials for recycling.

Table 38: Solid waste treatment facility at Goreswar town

Facility Type	Capacity (TPD)	Type of waste processed	End Product
Centralized Plant	0	Nil	Nil
Decentralized (10 nos.)	0.1	Wet	Manure
Decentralized (3 nos.)	0	Nil	Nil
MRF	3.6	Dry	Recycled product

Source : Goreswar Municipal Board, 2021

6.5 SOCIAL INFRASTRUCTURE

The Sustainable Development Goals 2030 aims at ensuring peace and prosperity by addressing social needs of for people globally – specifically, ending poverty and other deprivations must go hand in hand with strategies that improve health and education, to begin with. Access to social infrastructure such as schools and institutions of higher and vocational education, as well as health care ensures a well-developed and progressive community.

6.5.1 Educational facilities

Goreswar being a smaller municipality has 19 educational institutions from primary schools to degree colleges. Of these 11 are primary and high schools, and one senior secondary school. There are seven colleges for undertaking graduate education in the town.

Table 39: No of Schools

Sl.No.	Educational institution	No. of units
1	Primary schools	5
2	High schools	6
3	Sr. Secondary schools	1
4	Colleges	7
Total		19

Source : Goreswar Municipal Board, 2021

Taking a look at the Census 2011 for the educational institutions in the various revenue villages and the census town included in the Goreswar master plan area, it is seen that 136 school institutions are available till secondary school which is till class 10 level. Beyond that, only Goreswar Municipal Town has 7 degree colleges both government and private.

Table 40 : Availability of educational institutions (Govt. and Private) in Goreswar Master Plan Area, 2011

Facility	Goreswar Municipal Town	Revenue Villages in the GMP	(No. of institutions)
			Goreswar Master Plan (GMP) Area
Primary School	5	43	48
Middle School	6	36	42
Secondary School	-	46	46
Senior Secondary	1	0	1
Degree College	7	0	7

Any other higher educational institution	0	0	0
Vocational learning (Short-hand, Type-writing, MS Office, etc)	0	0	0
Others	0	0	0
Total	19	125	144

Source: District Census Handbook, Census 2011

As per the District Census Handbook of Baksa, 2011, there are anganwadis present in all the revenue villages as well the census town.

6.5.2 Health-care facilities

An adequate and well-distributed health infrastructure is crucial for efficient and timely response to health crisis. A quality health infrastructure plays a vital role in controlling various health related parameters like life expectancy, mortality rate, etc. to respectable level, and is also found to have a positive impact on speedy recovery from diseases. A sound health system is accessible and delivers high quality care at reasonable price. The following table shows the presence of healthcare institutions in the Goreswar Municipal Town as per the Census 2011 data.

Table 41 : Status of Health Infrastructure in Goreswar Master Plan Area

Health Institutions	Total units in the Goreswar Master Plan area (no.)	Availability of Doctors and Medical Staff	
		Doctors	Staff
Community Health Centre	1	3	6
Primary health centre/sub-centre	3	5	9
Maternity & Child Welfare Centre	2	2	4
OPDs	3	NA	NA
Allopathic hospital	1	1	5
TB Clinic	3	5	8
Family Welfare Centre	2	2	6

Source : District Census Handbook, Census 2011

Other than the above health institutions, there are 22 registered pharmacies in the total Goreswar master plan area.

6.6 RECREATIONAL FACILITIES

Within the Goreswar Municipal Town, there are two playgrounds provided by the Goreswar Municipal Board. Moreover, there are two water bodies within the municipal area, which may be developed into public recreational spaces.

6.7 BANKS

There are 9 banking service facilities available in the Goreswar Municipal area, but all of them are present within the municipal town. These include, the following,

Table 42 : Banking facilities in the Goreswar Master Plan Area, 2011

Facility	Number
Nationalised Bank	2
Private Commercial Bank	2
Co-operative Bank	1
Agricultural Credit Society	0
Non-Agricultural Credit Society	1

Source: District Census Handbook, Census 2011

6.8 DAILY MARKETS, WEEKLY HAATS, ETC

The Goreswar town has many commercial areas serving the residents of the Goreswar town, as well as the surrounding areas. These include the following daily markets, -

In the rest of the revenue villages, only four have regular markets available within them, while 17 of the villagers are dependent on weekly haats for their needs. Only four of the villages have Agricultural marketing societies. Barring, four of the revenue villages, all others have Public Distributions System shops within the Goreswar Master plan area.

7. LAND USE PLAN

7.1 EXISTING LAND USE

The Goreswar Master Plan Area consists of 24 revenue villages along with the Goreswar Municipal Board area, and covers a total area of 6164 hectares. Predominantly an agriculture-based land, there are also low lying marshy lands and ecologically fragile. Illegal construction and lack of scientific land-use control has led to unplanned and haphazard growth resulting in natural drainage to get affected in many areas. Natural and semi-natural vegetated areas have witnessed exploitation with these lands being often used for residential and other development. This has given rise to a threat of potential health hazards in addition to diminishing the aesthetic appeal of the Master Plan area.

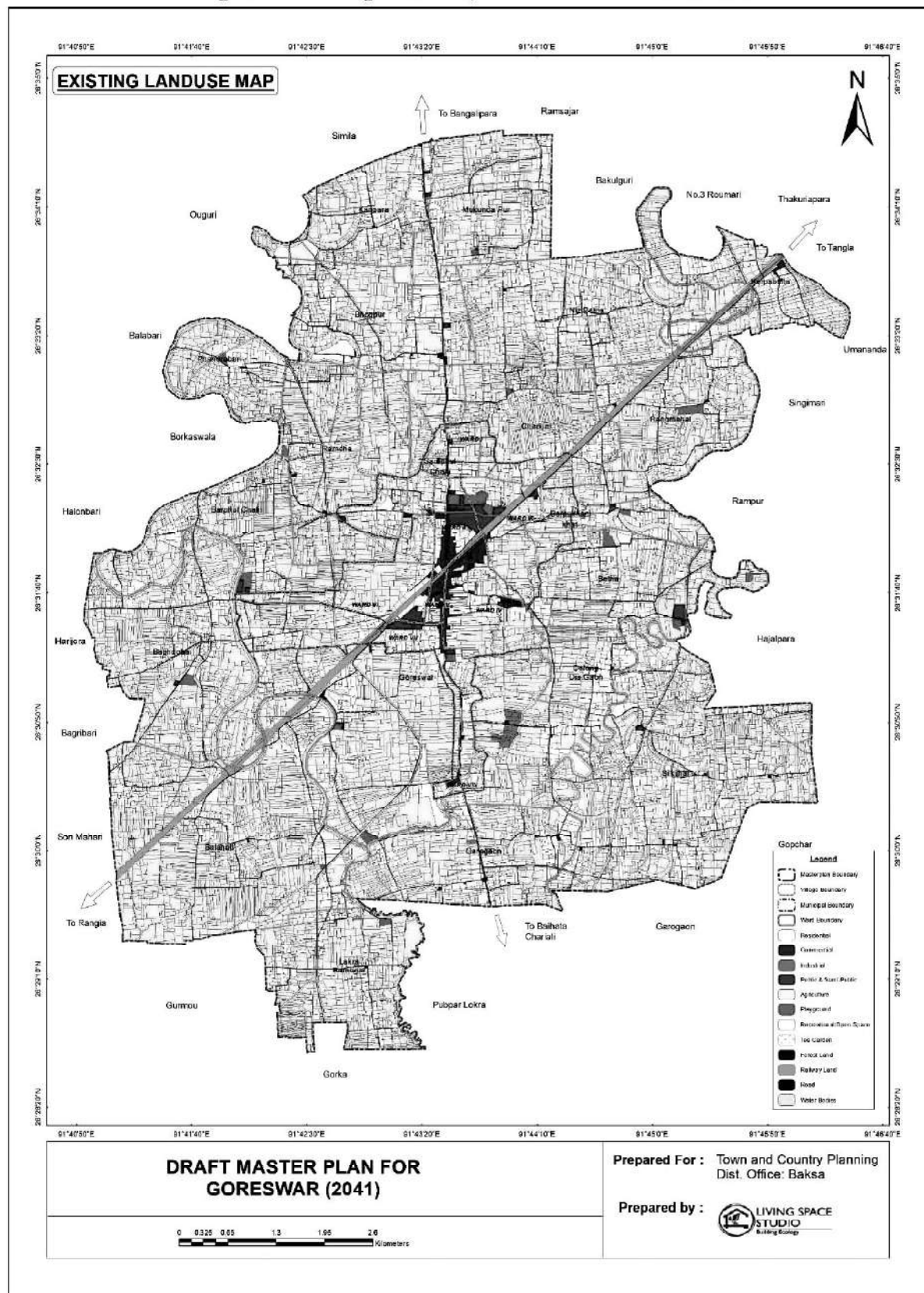
7.2 LAND-USE PATTERN

Land use survey was conducted for the Goreswar Master Plan area by the Consultant.

Table 43: Existing Land-use Classification (2022)

Sl. No.	Land use	Total Master Plan Area		
		Area in Sqkm	% To Developed Area	% To Total Area
1	Residential	14.10	81.10	22.87
2	Commercial	0.34	1.98	0.56
3	Industrial	0.09	0.49	0.14
4	Public & Semi-Public	0.41	2.34	0.66
5	Roads	1.37	7.90	2.23
6	Recreational	0.07	0.38	0.11
7	Railways	0.74	4.26	1.20
8	Playground	0.27	1.55	0.44
	Total developed area	17.38	100.00	28.20
9	Water Bodies	3.74		6.07
10	Agricultural	40.51		65.73
	Total Area	61.64		100.00

It can be seen from the above table that 81.10% of the total developed area is under residential land-use and accommodate primarily single family, detached houses. 1.98% of the total developed area is under commercial land-use. Commercial establishments have developed along the Feeder road and has extended to areas near the railway station. Industries occupy 0.49% of the total developed area. 2.34% of the total developed area is under public & semi-public land use. This is not enough and indicates a possible inconvenience and discomfort of the public in accessing public services. Transportation and Railways cover 7.90% and 4.26% of the total developed area respectively. Recreational land-use is almost negligible covering 0.38%, indicating a lack of proper space for the people to relax and unwind.

Figure 4 : Existing Land-Use, Goreswar Master Plan Area

7.3 LAND-USE INTERACTIONS

The survey conducted by the Consultant in 2022 reveals that the planning area has mixed land-use especially within the Municipal area. This has created inefficient and non-conforming land-use and loss of inter-relationship between various land-use. It is observed that quite a no. of land-use does not have functional relationship with the surrounding area. A few of them cause nuisance in the area where they exist at present. Relocation of such incompatible land-use to suitable site is, therefore desirable.

7.4 PROPOSED LAND USE PLAN

All areas under the Goreswar Master Plan have been designated as one of the following land use-zones, which are residential, commercial, industrial, public- and semi-public, recreational, transportation and agricultural.

The over-all land use break-up for the new proposed Planning Area measuring 6164 hectares. is as follows:

Table 44 : Proposed Land-Use Classification

Sl. No.	Land use	Total Master Plan Area		
		Area in Sqkm	% To Developed Area	% To Total Area
1	Residential	25.02	84.63	40.59
2	Commercial	1.33	4.49	2.15
3	Industrial	0.11	0.37	0.18
4	Public & Semi-Public	0.44	1.50	0.72
5	Roads	1.42	4.82	2.31
6	Recreational	0.23	0.78	0.38
7	Railways	0.74	2.50	1.20
8	Playground	0.27	0.91	0.44
	Total developed area	29.56	100.00	47.97
9	Water Bodies	3.73		6.05
10	Agricultural	28.34		45.99
	Total Area	61.64		100.00

- **Residential Area**

40.59% of the total developed area has been earmarked for residential land use. The residential areas are proposed to be developed as self-contained units with provisions of all community facilities and services, and work places within reasonable distances duly served by an efficient circulation system. Accessibility of the property by road and connectivity with the important nodes of the master plan area is proposed.

- **Commercial Area**

Commercial activities are critical to the economy of the community. 2.15% of the total developed area has been earmarked for commercial land-use. At present, retail trade is mixed with wholesale trade in the town which creates problems like traffic obstruction during loading and unloading activities. A lot of unregulated businesses have also sprung up in the Master Plan area

which will be accommodated to ensure public convenience and a sanitary environment to conduct their vocation.

- ***Industrial Area***

0.18% of the total developed area has been earmarked for industrial land-use. Goreswar Master Plan area is favourably located, with advantages of a good transportation network and proximity to market.

- ***Public & Semi-Public Area***

0.72 % of the total developed area has been earmarked for Public & Semi-Public land use.

- ***Transportation***

3.51% of land has been earmarked for transportation and railways respectively. The improvement of transportation infrastructure will include road widening, road realignment and road extension.

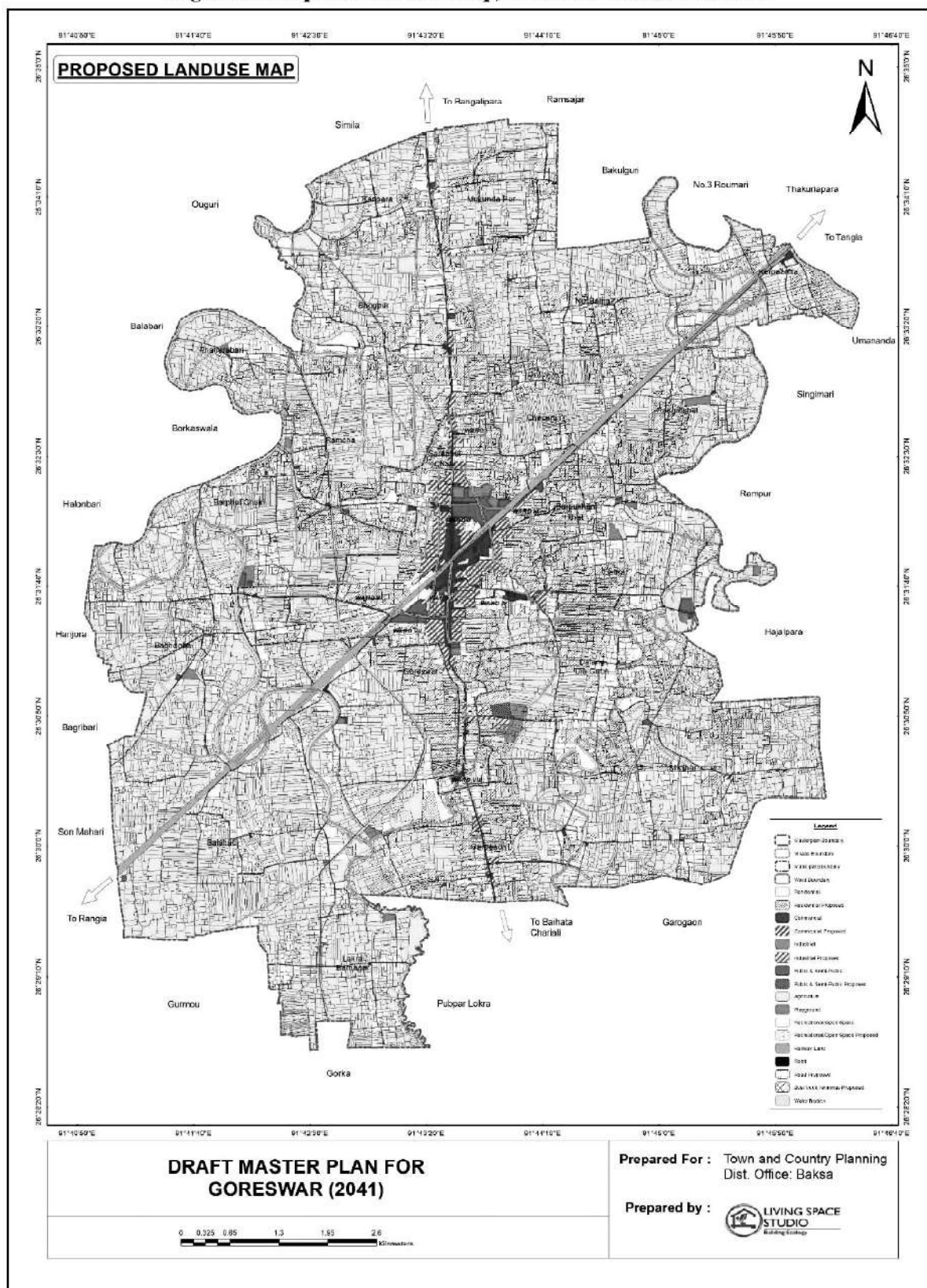
- ***Recreational Area***

0.38% have been proposed for recreational land-use. Public parks and immersion ghats will be developed and modernized to elevate public comfort and provide ease of access to them.

- ***Agricultural Area***

45.99% of land have been earmarked for agricultural land use. It has been found that large tracts of agricultural lands are lying fallow. Economic growth is accompanied by shift of these lands from agriculture to other uses. With increase in the value of these lands, they are fast getting converted into residential and commercial land-uses.

Figure 5 : Proposed Landuse Map, Goreswar Master Plan-2041



8. PROPOSED PROJECTS' BRIEF AND TENTATIVE FUNDING SOURCE

8.1 INTRODUCTION

Goreswar town can be converted into a major manufacturing hub and a vibrant commercial centre by reaping the advantages that its location and demography presents. A smart communication and a harmonious interrelationship between different organizations and stakeholders entrusted with the development of the region is to be established so as ensure that growth is sustainable.

For achieving this, future urban planning decisions need to be based on the judicious disposition of activities along with greater planning expediency to align its role for prosperity and planned urban development. The planning decisions of the Goreswar Master Plan are consciously aimed at sustained and planned city development. In order to generate positive urban development, the Master Plan would focus on conscious decisions to provide impetus and support to anticipated urbanization.

8.2 BASED ON EXISTING CONDITIONS AND PROJECTED REQUIREMENTS OF THE PLANNING AREA, IDENTIFY PRIORITY SECTORS AND PROJECTS

The Guiding Principles for preparation of Goreswar Master Plan 2041 are derived from planning experiences and challenges confronted in the city which include as following:

- Environmentally and Ecological Suitable Development
- Local Economic Development
- Sustainable and Integrated Transport System
- Inclusive and Collaborative Integrated Urban Development
- Mixed-use Development Policy

8.2.1 *Environmental and Ecological Suitable Development*

The topography and drainage system of this region presents a unique challenge towards attaining the perfect balance between resource conservation and utilization. The incorporation of effective environment conservation and sustainability features will be an important aspect in the preparation of this Master Plan. Environment conservation is a major issue that needs to be tackled while planning the development of any area. Efficient measures towards conserving the natural surroundings will be adopted, since the balance between natural and man- made surroundings significantly enhances the quality of life of residents.

Protecting the irrigated and fertile land as well as forest area and development in the less fertile area, will be the aspect of the planning proposal. An appropriate balance between built and un-built areas is proposed to be established so as to provide a good quality of life to the people inhabiting the area.

8.2.2 *Local Economic Development*

The locational advantage of Goreswar from commercial, cultural and tourism point of view needs to be viewed as important economic ingredient. To rejig its economy, local economic

indicators need to be identified and objectively assessed for taking policy decisions. To improve the economic development in the region, promotion of different economic sectors has to be carried out for diversification and strengthening of economic base of the city. Job-oriented land-uses have to be propagated in the master plan so that present level of unemployment in the region is drastically brought down. The social infrastructure of the area has to be emphasized as well so that the youths can be skilled, upskilled and reskilled in accordance with the needs of the present times, converting them into sources of demographic dividends.

8.2.3 Sustainable and Integrated Transport System

Goreswar town is fast transforming in its physical and socio-economic dimension. Traffic congestion, faulty parking, insufficient Road widths, decreasing Level of Service (LoS) of most of the roads, inefficient public transport, etc. are some of the problems of urban transport and transport network in Goreswar town. Keeping all these shortcomings in view, the following proposals have been made in this Master Plan:

- **Bus Terminus :** The intercity buses are plying from Baihata Chariali to Bangalipara having stoppage at Goreswarmain Chowk. Currently passengers are boarding buses directly from the that point. Such activities have increased the chances of accidents from high speed vehicles and loss of life and property. A dedicated bus terminus for intermediary stoppages and for better regional connectivity has been proposed near the main Goreswar-Baihata Road.
- **Truck Terminus :** Goreswar in the past has had a rich history of Agro based Industries. Due to its better connectivity through Road and Rail as well as availability of undeveloped land, it has the potential to become a modern-day industrial hub. A Truck Terminus has been proposed along the main Goreswar-Baihata Road which will serve the Industrial corridor as well as a parking spot for the vehicles going towards the state capital Guwahati.
- **Road Widening and Extension :** The Goreswar Town has been extended and from its 8 wards to 12 wards. The Goreswar Feeder Road is the only major Road which connects the North to South of the Goreswar Master Plan Area. Other alternative roads are either unpaved or narrow in width. Since Goreswar Municipal boundaries is extended to 12 wards it is proposed that the width of Goreswar Feeder Road may increase upto 24 meters along with necessary road signages and services.

8.2.4 Inclusive and Collaborative Integrated Urban Development

The Goreswar Master Plan Area is spread over 24 revenue villages which are predominantly rural in character. The countryside is viewed as a potential area of urbanization for Goreswar town in next two to three decades. Being close to the state capital and having good connectivity via road network and railway, the region presents a tremendous scope of growth. Having sound access to raw-materials and skilled and semi-skilled manpower, Goreswar can be elevated to a manufacturing hub. The basic planning principle is to create a sustainable blend of rural-urban continuum. The growth is proposed to be inclusive of all income groups integrating sectoral vision for holistic development of the region.

8.2.5 Mixed-use Development Policy

8.2.5.1 Concept

Any building(s) having a combination of more than one use at a specific point of time is said to have 'mixed use'. For example, a building having one use in the ground floor and other use(s) in the upper floor(s) is said to have mixed use. The mixed use shall not be misconstrued

with the mixed use of a plot or a parcel of land. It is a vertical land use change of a building across its floors rather than a changeover space laterally. Mixed use is always a combination of main use and the uses which are incidental to the main use. While the main use is defined as the Primary use, the incidental use is construed as Secondary use. It is an important planning tool to accommodate the unforeseen land use changes resulting because of competitive market forces in city centres and along important streets. Mixed use has also become inevitable because of limited scope for horizontal expansion as well as scarcity of land in such areas. For example, commercialisation along main arterials within the residential areas is an illustration of land use conversion resulting because of such factors. The main requisite underlined for the mixed use model is the compatibility of the uses in terms of their type and intensity. In no case, the uses defined as obnoxious or hazardous in this master plan under land use regulations shall be permitted under mixed use category. The secondary use has to be essentially subsidiary or conforming in nature like convenient shopping, primary health and education facilities and basic public services and amenities having manageable impact on the surrounding land use. However, this trend has to be regulated and restricted as prescribed in this Master Plan for numerous benefits and as such, has been for purposes of this Master Plan defined objectively to avoid its misuse while issuing building permissions. For purposes of this Master Plan, mixed use is defined where:

In case of mixed use distribution, the secondary use shall be restricted to one floor only (preferably the ground floor) which is more susceptible to land use changes. While issuing the mixed use permits, care should be taken to consider the Secondary use as ancillary use to the main use in size and scale within the structure.

8.2.5.2 Composite Mixed Landuse Model

As a policy measure, the proposed land use is viewed as a Composite Use broadly segregated and integrated across sectoral uses. As an inherent flexibility in the Proposed Landuse Plan, it is proposed to calibrate and to integrate the proposed land use to the hierarchy of road network in a horizontal mix, however, essentially segregating the hazardous and obnoxious uses. The policy is applicable to those uses which have been made permissible in a particular landuse.

In this Master Plan, a Composite Mixed Landuse Model is envisaged along the designated roads based on their proposed RoW.

8.3 FUND REQUIREMENT FOR EACH SECTOR/PROJECT IDENTIFIED UNDER THE SECTORS

No fiscal plan has been worked out at this stage. The final Master Plan would provide a basis for preparation of five yearly development programmes and yearly fiscal plans for implementation.

8.4 IDENTIFY LAND SITE FOR PROPOSALS: IN CASE OF GOVERNMENT LAND, INVENTORY OF MUNICIPAL LAND, STATE GOVT./ GOVT. AGENCY OWNED LAND, ETC. AND PLAN FOR ACQUIRING/LEASING THE SAME

The revised Master Plan proposes Negotiated Land Acquisition in place of compulsory land acquisition as an innovation in land acquisition procedures for speedy urban development in consultation with various Govt. Depts.

- **Concept of land pooling :** As per the survey conducted by Town and Country Planning, Baksa, it was observed that few neighbourhoods in the villages included in the MP are not deficient of housing but these are cases of non-development of these areas may be due to lack of awareness of education. So, the people are staying in houses which are made of locally available materials. The economic conditions and livelihood for these families still is agriculture and day to day informal business. The main need of the hour is to impart awareness among these masses that where they are residing in not sustainable and pose a threat to their lives. There is an urgent need to upgrade these houses as they have the tenure ship but their economic progress make it hard for them to do the same.

8.5 INDICATIVE SOURCES OF FUND: SPECIFIC CENTRAL SCHEME FUNDS (10%, NLCPR, AMRUT, INFRASTRUCTURE DEV FUND, ETC) ASSAM FINANCE COMMISSION FUNDS, CM'S SPECIAL PACKAGE, PUBLIC PRIVATE PARTICIPATION, LOAN FROM (EXTERNALLY AIDED PROJECT (JICA-WORLD BANK-ADB), ETC.

8.5.1 Roads :

- **National Highways:** The Government of India passed the National Highway Act, 1956, to take the responsibility of building and maintaining the National Highways.
- **State Roads :** These roads are constructed and maintained by the Public Works Department (Roads).
 1. "Assam Road Maintenance Policy" and "Assam Road Maintenance Fund Rules" came into force with effect from 25 September, 2014. Its main objectives are to make available funds to Assam State Road Board (ASRB) on a sustainable and dependable basis for maintenance of State Roads.
 2. "Assam State Roads Project" is an Externally Aided Project (EAP) implemented for by the Public Works Roads Department (PWRD) through the ASRB for improvement of State Highways (SH) and Major District Roads (MDR) in the State.
 3. The Central Road Fund (CRF) was established by the Parliament by law (Central Road Fund Act 2000) in order to fund the development of State highways, Major District Roads, etc. The Fund is utilised for projects relating to the construction and development of State Roads including roads of inter-State connectivity and of economic importance.
- **Village Roads :** Village roads are maintained by the Zilla Parishads and PWD. Pradhan Mantri Gram Sadak Yojana is a notable scheme launched by the Government of India to provide good all-weather road connectivity to all villages in India. In 2015, it was announced that the Central Government would contribute 60% of the funds and the State Government would contribute 40% of the funds.

8.5.2 City Beautification :

City beautification projects like public parks, river front developments, multi-utility buildings can be taken into consideration once the town is covered under City Infra Development Fund (CIDF). PPP models should also be explored to make the projects more sustainable.

Availability of adequate funds is an important determinant for successful implementation of the plan proposals. While conventional pattern of project financing is being in transition, the private investments and public private partnership modes of infrastructure development assumes greater significance. This apart, the programmes of the National Government provides greater opportunities for improving the status of infrastructure and service delivery. Hence, it is the

responsibility of every development agency concerned to take initiatives to draw maximum funding for the plan implementation.

8.5.3 *National Programmes and Funding agencies available for the resources in urban area.*

Integrated development of Small and Medium town Programme, is a programme of national importance, which has identified the sectors and projects eligible for assistance, which include:

- i. Water Supply (including de-salination plants) and sanitation
- ii. Sewerage and Solid Waste Management
- iii. Construction and improvement of drains/storm water drains
- iv. Construction/Up-gradation of roads, highways/expressways
- v. Parking lots/spaces on Public Private Partnership basis
- vi. Development of heritage areas
- vii. Prevention & rehabilitation of soil erosion/landslides only in case of Special Category States where such problems are common and
- viii. Preservation of water bodies.

9. DISASTER PLAN

9.1 INTRODUCTION

The District Disaster Management Plan is an effective plan which envisages several measures that can be taken in the event of any kind of disaster. The State Policy recognizes that hazards are inevitable but these need not convert into disasters. This Policy is based on the twin principles of minimizing human suffering during disasters and reduction of financial losses through integration of disaster risk reduction activities into development planning.

Owing to a unique geographical and geo-climatic setting, the State of Assam has witnessed a number of disasters, ranging from incidents of fires to destructive floods and catastrophic earthquakes. The State has witnessed many natural and manmade disasters especially in the 19th and early 20th century. In the wake of recurring disasters, the State has always paid heavily in terms of loss of life and property. Like other parts of the State, Goreswar Town is a multi-hazard prone area. Multi Hazards which are confronted in the town are detailed in table below-

Table 45 : Multi Hazards Areas Covered

Sl.No.	Hazard	Areas Covered
I.	Floods	Baksa is one of the flood prone districts of Assam. There are several nos. of rivers and tributaries in Baksa which originates from Bhutan hills. They are Pagladia, Baralia, Nona, Ghagra, Mora Chowalkhoa, Mora Pagladia, Goreswar and Kaldia etc. They flows through the heart of the district and merges in the river Brahmaputra.
II.	Earthquakes	The tectonics of the Assam region is dominated by convergence of the India, Burma and Eurasian plates and is categorized as Seismic Zone- V which would need special measures to mitigate, minimize and safeguard the life, property and infrastructure which makes structural safety important.
III.	Landslides	Areas along major Riverbank
IV.	Drought	Most of the paddy growing areas depend upon the rainfall. The monsoon commences around the middle of April/May. For timely agricultural operation, a few showers of pre-monsoon rain is absolutely necessary. Regular rainfall till the middle of October can ensure a good harvest. But, if the rainfall at any circumstances will not happen then this will lead to improper agricultural operation and growth of crop and finally the drought will occur. So drought is caused due to failure of rains in season. The areas under drought need recharging and retention of water table for both urban and agrarian activities.
V.	Wind storm	Occasional wind storms is destroying crops, horticulture and houses in Goreswar& it is prone to high speed winds causing extensive damages to urban infrastructure and urban forestry.
VI.	Hailstorms	Although hailstorms rarely involve loss of lives, their economic impact can be severe. The damage appears to be a function of the intensity and duration of storms and the size of the hailstones, which these produce. The damage itself is often produced not only by the impact of falling hailstones, but also by the high winds and torrential rains that is part of the hailstorm.

VII.	Fires	In Assam due to peculiar housing patterns maximum fire accident cases takes place. These houses are of generally mud-built walls with thatched roofs made out of timber, bamboo and straw. They spring up in clusters. In summer fire accident becomes frequent; it destroys houses and properties and causes serious distress to the afflicted people. In Assam, the Harijans, Adibasis and other economically backward group who live in congested localities are the targeted victims of the Fire Accident. However, incidents of fires are recorded in the congested parts of the city and urban poor areas.
VIII.	Human induced disasters	All parts of the Goreswar Town vulnerable to man-made disasters due to competing urban uses, high cost of land and limited land resource.

District Disaster Management Authority should get area-specific hazard, vulnerability and risk maps prepared using GIS database for mitigation and emergency management. The plans so developed shall be operational, regularly reviewed and updated. This will help in the vulnerability assessment of town after proper zonation. Specific measures like micro-zonation of Goreswar Master Plan based on disasters and integrating it with the land use planning and zoning regulations, retrofitting of infrastructure and buildings, disaster-safe construction technology and strengthening the capacities of communities shall be promoted in a time-bound manner. The construction work and other activities that may lead to situations eventually resulting in disasters shall be monitored regularly in vulnerable areas like water-bodies, hill slopes.

Hazards like earthquakes and cyclones do not kill people but inadequately designed and badly constructed buildings do. Ensuring safe construction of new buildings and retrofitting of selected lifeline buildings is a critical step to be taken towards earthquake mitigation. The Building construction, material and design specifications as laid down in the National Building Code-2005 shall have to be a mandatory requirement for important and high rise buildings. In case of areas having moderate to high vulnerability of flash floods and landslides, the buffer zones envisaged in this Master Plan need to be implemented while permitting any development in such areas.

9.2 SAFETY AGAINST NATURAL DISASTERS

9.2.1 *Earthquakes*

The application for seeking building permit shall be accompanied with a report of Architect/Structural Engineer certifying that the proposed structure has been designed structurally keeping in view the safety measures against earthquakes as indicated in the following Bureau of Indian Standards (B.I.S).

Bureau of Indian Standards (B.I.S).

- a. IS: 13935: 1993
Repair and Seismic Strengthening of building guidelines
- b. IS: 1893 (part i): 2002
Criteria for Earth quake Resistant Design of structure
- c. IS: 4326 1993 (2002-04)
Earthquake Resistant Design and Construction of building – Code of practice
- d. IS: 13920: 1993

Ductile Detailing of Reinforced Concrete structures subjected to seismic Forces – Codes of Practice

e. IS: 13827: 1993

Improving Earthquake Resistant of Earthen Building – Guidelines

f. IS: 13828: 1993

Improving Earthquake Resistance of low strength Masonry Building Guidelines

9.2.2 Fire Protection and Fire Requirements

This part covers the requirements of the fire protection for the multi-storied buildings (high rise buildings) and the buildings which are of 15 mtr. and above in height and low occupancies of categories such as Assembly, Institutional, and Educational more than two storeyed and built-up area exceeds 1000 sq.mt. Business where plot area exceeds 500 sq. mt., Mercantile where aggregate covered area needs 750 sq.mt., Hotel, Hospital, Nursing Homes, Underground complexes, Industrial storage, Meeting/Banquet halls Hazards Occupancies.

Fire protection requirements: Buildings shall be planned, designed and constructed to ensure fire safety and this shall be done in accordance with Part IV Fire protection of National Building Code of India. The building schemes as such also be cleared by the District Officer of the Fire and Emergency Services Department before issuance of building permit.

9.3 STANDARD OPERATIONAL PROCEDURE (SOP) ON DISASTER: PRE-DISASTER, DURING AND POST DISASTER

The District Disaster Management Plan-2014 (DDMP) updated by District Disaster Management Authority is an effective plan which envisages several measures that can be taken in the event of any kind of disaster within its territorial limits.

The plan deals with Risk Assessment and Vulnerability Analysis, Identification of disaster prone areas, Response structures, Inventory of Resources, Standard Operating Procedures, Directory of Institutions and key Individuals. The plan is prepared to help the District Administration focus quickly on the essentials and crucial aspects of both preparedness and response.

The Master Plan proposes that the facilities like hospitals, fire services, police, schools, water supply, bridges, flyovers and underpasses, electricity, grid stations are critical in nature for post – disaster management. To ensure functioning of critical facilities, buildings occupying such facilities and falling in Seismic Zone- V shall be retrofitted. District Disaster Management Authority- Baksa, shall develop a clear cut retrofitting strategy at its own level for this purpose. Safety audit of all existing important public and assembly buildings shall be done within one year.

